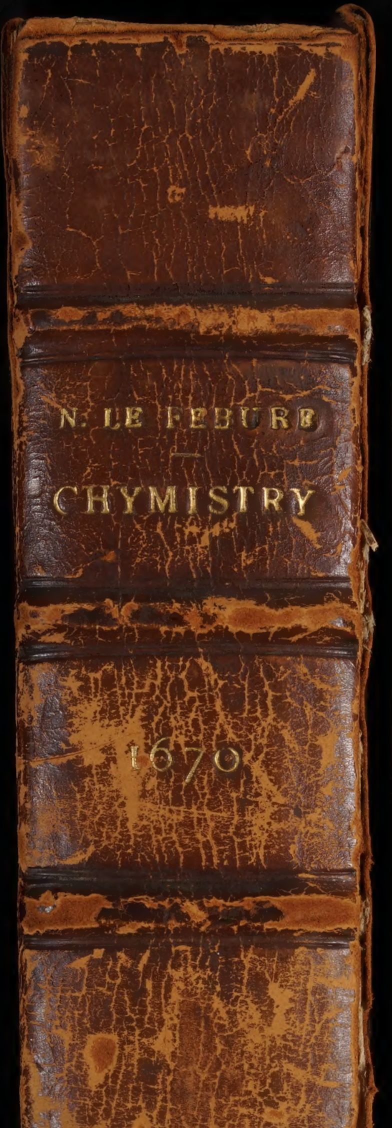

N. LE FEBURE

CHYMISTRY

1670

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Michaelis Lee Dicker, Med. Doct.
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1670 (2nd issue)

A
Compleat Body
OF
CHYMISTRY:

VVherein is contained whatſoever is neceſſary for the attaining to the Curious Knowledge of this Art; Comprehending in General the whole Practice thereof: and Teaching the moſt exact Preparation of *Animals*, *Vegetables* and *Minerals*, ſo as to preſerve their Eſſential Vertues.

Laid open in two Books, and Dedicated to the Uſe of all APOTHECARIES, &c.

By *Nicaſius le Febure*, Royal Profeſſor in Chymiſtry to His Majeſty of *England*, and Apothecary in Ordinary to His Honourable Houſhold. Fellow of the Royal Society.

Rendred into Engliſh, by *P. D. C.* Eſq; one of the Gentlemen of His Majeſties Privy-Chamber.

PART. I.

Corrected and amended; with the ADDITIONS of the late FRENCH Copy.

London, Printed for *O. Pulleyn* Junior, and are to be ſold by *John Wright* at the Sign of the *Globe* in *Little-Brittain*, 1670.

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To His moſt Excellent

MAJESTY
Charles the Second,

King of England, Scotland, France *and* Ireland, *&c.*

ROYAL SIR,

THE more I reflect upon the gracious favour your Majeſty hath done me, by calling me to be one of your Majeſtie's ſervants: The more my mind is raiſed and excited to apply wholly her ſelf to the ſtudy and diſquiſition of the Contexture and

Compound, and of the reſolution of Natural bodies: whereby thoſe wonderful Vertues, and ſpecifical proprieties which Nature hath hidden in their Center, may be diſcovered and laid open. And as your Majeſty is eminently verſed in the nature of good, and knows, that good can only be properly called ſo and reputed ſuch, inſomuch as it is more obvious to the underſtanding, and more communicable in the practice; ſo likewiſe have I begun to follow this heroical Idea, from the time I did live in France, *and there teach Chymical Phyloſophy, I did then by vocal expreſſion declare as much as I was capable to do; and ſince GREAT SIR, I have compiled in* French *this Book; which now being made* Engliſh *by one of your Majeſties Servants (a lover and great admirer of this noble Art) I preſume to dedicate unto your Majeſty; that having the ſtamp of this Language upon it ſelf, it may go more currant amongſt, and be better underſtood by your own ſubjects, by whom your*

Majeſties Royal inclinations to the publick good being generally ſo well known through the vaſt extent of your Majeſtie's Dominions, this Gentleman hath concurred with me in the laudable intention of ſeconding this tenderneſs, and paternal care of your Sacred Majeſty, for preſerving and reſtoring the health of thoſe three Nations which Providence hath ſubjected to your ſacred Empire, and for inſtructing thoſe which dedicate themſelves to the practice of the Nobleſt and beſt kind of Pharmacy. *To this end, I ſay, hath been tranſlated this which I had written, that it might become more familiar and uſeful to the one for their health, to the other for their information and improvement of their knowledge. I hope,* SIR, *I ſhall have the good fortune from henceforth to produce ſome other things, which may beſt contribute to the ſatisfaction of that ſublime, Heroical, and moſt worthy curioſity of your Majeſties diſcerning Genius, and which according to your own Royal deſire and intention ſhall* *find a ſucceſs towards the good and advantage, both of ſick and healthy; it is the earneſt wiſh of him, who to his laſt breath ſhall ever be,*

Royal Sir,

Your Majeſties moſt humble, moſt obedient, and faithful Servant

N. le Febure.

TO THE

APOTHECARIES OF ENGLAND.

SIRS,

I Am very glad I have applyed my ſelf during the time I was in *France* to ſome work uſeful to the Engliſh Nation, even before His Majeſty of *Great Britain* had done me the hononr and been graciouſly pleaſed to call me unto his Royal ſervice. For in this *Treatiſe of Chymiſtry* you ſhall find a Chapter of *Vegetables* and their preparation, which contains ſeveral ſpecifical Remedies, to oppoſe and root out *Scorbutical Diſeaſes*, which are but too frequent and connatural to the *Clime* of this your *Country*; ſo that with a very earneſt and ſincere heart and affection I do impart unto you, not only that which I have declared of moſt abſtruſe and ſecret particulars in the matter of *Vegetables*, but all the *Contents* of this whole *Work* alſo, both touching *Animals* and *Minerals*, where you likewiſe will meet with a conſiderable Harveſt of *Antiſcorbutical Remedies*. I wiſh all may ſucceed to the common good and advantage of your *Nation*, and to your own in particular; ſince it is the chief aim, and ſole intention of our *Great Soveraign*. You ſhall know by the ſequel of this *Diſcourſe*, that I have now, and ſhall always have for you and the improvement of your knowledge, the ſame tenderneſs I have had for the *French Apothecaries*; I ſhall then advertiſe you, that 'tis near five and thirty years ſince I was firſt addicted to *Pharmacy*, and that by a Father that was in his profeſſion moſt exact, who employ'd himſelf particularly in the curious ſearches into things neceſſary for the *Election, Preparation*, and *Compoſition* of *Medicines*, which he kept in his Shop, to diſpoſe of according to the precept and orders of the *Phyſicians*. I may ſay, as he was my *Father*, ſo he was my *Maſter*, from whom I received the firſt *Elements* of *Pharmacy* and *Chymiſtry*; who likewiſe in the firſt place enjoyned me to obſerve that excellent principle, *viz.* to exerciſe my *Profeſsion* with *Fidelity*, ſuffering nothing to diſcredit the dignity of this *Art*: But above all, to follow punctually the directions of the *Phyſicians*, which ought to be the *Fountain* from whence all firſt receive the *Noble knowledge* of true *Natural things*, and the manner of preparing them well.

But this excellent *Patron*, by whom I ought to ſquare all the *Actions* of my beſt *life* and *Profeſsion*, ſoon forſook me, leaving me full of nothing but *grief* for his *loſs*, and a true *Prognoſtication* of the decay of *Pharmacy*. For he foreſaw that the body of the *Phyſicians* was divided in ſuch a manner, that the branches were ſeparated from the Roots, and that the nouriſhment neceſſary for their ſubſiſtance muſt fail them without queſtion, if he did not effect a good re-union, that might oblige the *Phyſicians* to continue their ſtudies and ſearches into *Naturals*, and ſo communicate them to the *Apothecaries*. And theſe ought to receive them with due reſpect and gratitude, to the end that they might joyntly dedicate themſelves to the Publick good, without farther rending themſelves by partiality and particular intereſt, which hath ever been the ruin of thoſe that are willing to indulge themſelves from their due endeavour. Now when I ſaw my ſelf deprived of the inſtructions of a *Father* and a *Maſter*, I applyed my ſelf wholly to follow his laſt precepts. Whereupon I ſearcht among the dead for thoſe *Phyſitians* that had written beſt of *Pharmacy*, and among theſe living, thoſe that did practice beſt, and did labour daily to imbelliſh it by their new doctrines, and ſupplies of good and wholſom Remedies.'Twas my good fortune to find at *Sedan* (which was then the place where I was ſetled) one *Dr. Duban* deceaſed, Dr. of *Phyſick*, and *Profeſſor* of *Philoſophy*, who did me the favour to inſtruct and ſhew me much; 'Twas of this great Man that I confeſs I receiv'd whatever did by degrees promote in me that good deſign of diligent ſearching into *Phyſical* verities, becauſe thoſe notions are abſolutely neceſſary for our *Apothecary*, that would acquit himſelf well in his Profeſſion with requiſite fidelity; and I can ſay in commendation of his admirable *Genius*, that *France* hath ſuffered much by his untimely death; for he was deſigning then to publiſh ſome Writings, which would have much illuſtrated the knowledge of things *Natural*, *Medicine* and *Pharmacy*. He had *Anatomiſed* Nature in general and particular ſufficiently to acquit himſelf honourably of what he had undertaken, had he not been raviſht hence ſo ſoon to the infinite loſs of the Common-wealth of *Learning*. Afterwards at *Paris*, I had the happineſs of liberty to converſe with *M. Du Clos* Dr. of *Phyſick*, who did me the favour to correct my defaults, and lead me as by the hand of his judgement and experience, through all that which I have undertaken in my endeavors to advance the dignity of *Pharmacy*, which now lies bending towards its ruine, if it be not upheld by its true *Arches* and *Pillars*, thoſe faithful, learned, experienc'd and curious *Phyſitians*. This excellent and rare *Phyſitian* denied me none of thoſe lights, or illuſtrations, that are neceſſary for the well-doing of thoſe that addict themſelves to the legitimate preparation of *Pharmacy*; ſo that I am indebted to him for the well-being I have acquired in my *Profeſſion*. Thus I have continued, till at length I was called ſome years ſince by the favour of *Monſ. Vallot*, the moſt worthy and *Chief Phyſitian* to our moſt invincible *Monarch*, as *Apothecary* and *Diſtiller* in ordinary to the King, to perform by his precepts and order leſſons and operations in a courſe of the true *Pharmacy*, which is *Chymiſtry*, and that in the Garden which his Majeſty prepared in the Suburbs of St. *Victor*. 'Twas there truly that I found wherewithall to ſatisfie the appetite of my curioſity, not only by the profuſe expence with which this true Father and Reſtorer of Medicine and *Chymiſtry* furniſht us veſſels and materials withal, for the demonſtrations of thoſe operations which I was commanded to make yearly, as well after the Ancient as new wayes; But likewiſe by thoſe unfathom'd depths of *Learning* and *Experience* which he poſſeſt, and which he communicated to me for the application of it to my ſelf in particular, and the imparting of it in publick Leſſons ſo in general; (I find I come in my expreſſions beneath my deſires) that I thought I could not do leſs then to let *Poſterity* know, how much I ſtand indebted to the bounty, learning, and ſole generoſity of this great illuſtrious *Mecenas*.

I have given you this account of the progreſs I made in *Pharmacy*, to the end that you may ſee the method of making your own advantage, and to diſcover to you the reaſonable ſubmiſſion that you and we do, and always ſhall owe to our illuſtrious Maſters. You muſt know then by this that I am about to ſay, that I give you nothing here but what hath been received from the *Phyſitians*, ſo that it is to them only to whom you owe the obligation, And as for my publiſhing this *Tract of Chymiſtry* in *French*, 'tis becauſe I would imitate the moſt eminent Authors of *Germany*, who thought themſelves obliged to write of *Chymical Pharmacy* in the vulgar Tongue, that it might likewiſe be uſeful not only to the *Apothecaries*, but, that it might likewiſe be ſerviceable to men of other profeſſions. For as much as is impoſſible to write with order and method of that which is neceſſary to Art, when we declare not, nor illuſtrate at the ſame time the principles of things *Natural*; and moreover, becauſe we diſcover not the order of the generation,and corruption *Phyſical*,from which all the effects of *Nature* do reſult which are the ſubject of the operation as well of the one as the other *Pharmacy*.

I have likewiſe publiſht it, to contribute to the publick good in general, and yours in particular; For as I have never had a greater ambition than to ſee *Pharmacy* practiced in its true luſtre, which I now ſee vilified and neglected, and as *I* am fixed in this profeſſion under the protection of one of the chiefeſt of all *Phyſitians*, one that entertains the higheſt and moſt generous deſign for its eſtabliſhment; ſo likewiſe will *I* guide and conduct you by the Theory and Practice of this *Treatiſe of Chymiſtry* to a fair, exact,faithful and veritable profeſſion of our Art.

You will learn hence *Readers*, as in other Tracts of *Pharmacy* abundance of things, their true and legitimate preparation, from whence muſt follow neceſſarily a good and agreeable Compoſition. *I* have undertaken this labour for your uſe,becauſe *I* have never yet found one that hath taken the pains or care to ſhew and diſcover punctually the manner of operating upon things to preſerve their vertue, and correct their defaults.

Moreover, You may obſerve the difference there is of the correction of theſe Medicaments which are made according to the opinions and directions of the Ancient *Pharmacy*,with that which is ſhew'd and commanded by the Modern.

You may obſerve likewiſe the envy and malice of thoſe that carp at and rail againſt *Chymiſtry*,and how ignorantly they averr, that this admirable Art is not occupied by its followers, but on poyſons, when you will finde the Treatiſe of the *Chymical preparation of Animals* as well as *Vegetables*. Laſtly, You will finde the difference that there is in the *modus faciendi* of the Ancient *Pharmacy*, with the judicial, intelligent and reaſonable government of *Chymical Artiſts*, for the ſeparation of the pure from the impure, and for the preſervation

tion of that which cauſes the efficacy and the vertue in things.

You may and ought to believe, *Readers*, That though *I* have not made all the preparations that are deſcribed in this Tract, yet nevertheleſs I have tried the greater part, and may therefore judge of the poſſibility of their operation and the liberality and vertue of things by the practice and experience in other works which daily paſs my hands. If you do but examine thoſe Authors that have given you the deſcription of ſome things, *I* will leave it to your diſcretion to judge the pains *I* have undertaken to denote to you thoſe little Obſervations which are neceſſary for operating, and without which it is impoſſible to avoid failing. *I* have followed the Method and Order of that knowing and expert Phyſitian *Schrederus* who is yet living and a Stipendiary to the City of *Franckfort*, to whom all *Apothecaries* are greatly obliged for the excellent *Chymical Diſpenſatory* he hath publiſht. *I* recommend to you likewiſe the *Auſpurge Diſpenſatory*, illuſtrated by the *Remargues* of that great and brave *Artiſt* Mr. *Zwelſer*, Phyſitian to his *Imperial Majeſty*, as likewiſe to the *Appendix* joyn'd to it, to the end that you may have greater knowledge of thoſe Noble Lights which theſe two excellent perſons have communicated in publick, and from whence I have drawn many things that will ſerve for your inſtruction if you pleaſe to give your ſelf the trouble to read and practice them.

Laſtly, *Readers*, I deſire with the greateſt paſſion, that this may redound to the glory of *Medicine*, to the advancement of the one and the other *Pharmacy*, but above all to your good and particular ſatisfaction.

THE PREFACE.

THey that reckon Chymiſtry amongſt the modern Arts, and of but late invention, betray their knowledge both in the hiſtory of Nature, and the reading of ancient Authors: Since, in the firſt place, Chymiſtry is nothing elſe but the Art and Knowledge of Nature it ſelf; that it is by her means we examine the Principles, out of which natural bodies do conſiſt and are compounded; and by her are diſcovered unto us the cauſes and ſources of their generations and corruptions, and of all the changes and alterations to which they are liable: And ſecondly, it is known, that the ancient Sages have taken from Chymiſtry, the occaſions and true motives of reaſoning upon natural things, and that their monuments and writings do teſtifie this Art to be of no freſher date then Nature it ſelf. To this do agree the teſtimony of the holy Scriptures, by whom we are taught, that even in the Worlds Infancy, *Tubal-Cain* the eight of Mankinde from *Adam* deſcended of *Cain's* line, was an expert Artiſt in all Braſs and Iron works, which he could not have been without a previous knowledge of Minerals, and without being well acquainted, that the Mineral nature contains in it ſelf and comprehends the Metallick, as the pureſt part of its eſſence. But this knowledge cannot be attained unto, but by the help and skill of *Chymiſtry*; ſince it is by this Art we are informed, how a metallick, malleable and ductile body, may be extracted out of brickle and inform Minerals. Whence we do ſafely cenclude, that he did receive this noble Art from his Predeceſſors, or being himſelf the inventor of it, left it to Poſterity, as the richeſt Jewel they could inherit from him. This Aſſertion may be proved by the moſt ancient of Authors, and moſt worthy of credit; and ſo we have upon record, that *Moſes* took the Golden Calf, an Idol of the *Iſraelites*, did calcine it, and being by him reduced to powder, cauſed thoſe Idolaters to drink it, in a reproach and puniſhment of their ſin. But no body, how little ſoever initiated in the myſteries of this Art, can be ignorant, that Gold is not to be reduced to Powder by Calcination, unleſs it be performed either by immerſion in Regal Water, Amamulgation with Mercury, or Projection; all which three Operations are only obvious to thoſe which are fully acquainted both with the Theorical and Practical part of Chymiſtry. This truth is confirmed by *Hyppocrates*, when in his Book *de Diata*, he ſaith, *Artifices aurum molli igne liquant*: and all experimented Artiſts know, that Gold is not to be melted without ſome violence of fire, and that the action of fire doth rather purifie it, then deſtroy it, unleſs it be made tractable and volatile by the help of certain ſalts and powders, only known to few perſons; and thoſe ſpecially who have had their hands in the work, and by practice attained the ſecrets of the Art. We could joyn to this, the authority of *Ariſtotle*, made uſe of by his Sectators of this Age, to oppoſe Chymiſtry, who ſaith, That the Inhabitants of *Umbria*, were wont to calcine Reeds, thereby to extract a ſalt out of them for their ordinary uſe; which they would not have undertook without being firſt taught by the principles of this Art, that Salt is a body of an uncorruptible nature, which by this vulgar calcination could not be deſtroyed: And if we run over all Ages ſince the Worlds Creation, we ſhall ſcarce find any wherein ſome great man hath not raiſed himſelf a name to live in the remembrance of Poſterity, by the help of Chymical Learning. Witneſs the *Ægyptian Mercury*, or famous *Triſmegiſt*, whoſe works do at this day exerciſe the underſtanding of the greateſt wits: Witneſs the firſt inventor of Glaſs; and that other more skilful Artiſt, which had attained to that admirable ſecret of making it malleable, and dyed with it, by the ſtrange and tyrannical policy of the Emperour *Tiberius*. And do not *Geber*, *Raymundus*, *Lullius*, *Peter* of *Apona*, *Baſilius*, *Valentinus*, *Iſaac* the *Hollander*, and *Paracelſus*, ſufficiently prove by their incomparable works, that Chymiſtry is the true Key of Nature; that by her means the expert Artiſt diſcovers her hidden beauty, and that without her aid, no man ſhall ever attain to the true preparation of thoſe remedies, which are only capable to encounter with that *Hydra* of various diſeaſes wherewith humane nature is daily afflicted and aſſaulted? But we ſhould prove ungrateful to our Age, and the memory of a moſt worthy and charitable Phyſician, and to the induſtry of one of the moſt ingenious and exact Artiſts that ever was, if we ſhould paſs by unmentioned the *ſubtil Van Helmont* lately deceaſed, and the *laborious Glauber*, yet living, ſince they are as the two Beacons and Lights which we are to follow in the Theory of Chymiſtry, and the beſt practice of it: From their works then, and *Paracelſus*, we acknowledge to have compiled this *Abridgement of Theorical* and *Practical Chymiſtry*, which we ſhall divide in two parts: The firſt containing the Theory, the ſecond the Practice of the Art: The firſt part divided in two Books, ſhall treat in the firſt, of the Principles and Elements of Natural things; and in the ſecond, diſcover the ſprings and effects of purity and impurity in them: The ſecond part ſhall alſo be divided into two Books; the firſt whereof is to contain all the neceſſary terms, both to reduce in practice, and underſtand the operations of the whole Art; and the ſecond and laſt of all, ſhall open the means, and give a plain deſcription, whereby to anatomize all mixt bodies, whether Vegetables, Animals, or Minerals, and thence to extract ſuch remedies as are neceſſary for the cure of our diſeaſes. But before the principal matter be entred upon, I have not thought it unneceſſary, for the Readers ſatisfaction, to clear ſome few Queries, which uſe to be moved touching the nature of this Noble Art.

A Preliminary Diſcourſe, containing ſome few Quæries about the Nature of Chymiſtry.

IT is one thing to treat of a Science and Art, in order to teach it, and it is another to diſcourſe upon the ſame: The firſt belongs properly to the Artiſt; the ſecond is a matter of deeper ſpeculation, and belongs to the enquiry of the Philoſopher, whoſe part it is, to treat of the method, object, end, and Action of every Art or Science. According to theſe rules, we will ſuccinctly examine the moſt difficulties occurring in this Art, propounded in the following *Quæries*, and firſt, *Concerning the Names uſually given to Chymiſtry, whence they are derived?*

1. *Quary.* This art, as many others, hath according to its ſeveral effects, received ſeveral names; the moſt ordinary is that of *Chymia*, or *Chymiſtry*, which ſeemeth to have its original from the *Greek* word χυμος, ſignifying Gum, or Liquor, becauſe it teacheth to reduce the moſt ſolid and compact bodies into Juice or Liquor. Sometimes it is called *Alchymia*, Alchimy, with an addition of the *Arabick* Particle ال *al*,* which is the indication of ſome remarkable thing; oftentimes prefixed as a Particle: Others have called it *Alchamia*, ſuppoſing *Cham* one of the Sons of *Noah*, to have been after the Flood inventer and reſtorer of

* Anſwerable to the *Greek* Article ὁ, ἡ, τό.

of Chymical Arts, but chiefly Metallick. Sometimes it is called *Spagiry*, which name includes the Nobleſt of her operations, namely to ſeparate and joyn again ſubſtances, from the *Greek* * σπαγείρειν; And becauſe none of her operations can proceed without external fire, which doth excite the internal heat of bodies: It hath the name alſo *Pyrotechny*, as the Art of fire, from the *Greek* πῦρ & τεχνὴ, as to ſcy, τεχνὴ τοῦ πυρὸς. If it be called the Art of *Hermes*, or *Hermetical*, it gives a note of her Antiquity; as *Diſtillatory Art*, or Art of Diſtillation, deſigns the moſt familiar of her operations. Of all theſe names we rather chooſe that of *Chymiſtry*, as being the moſt vulgarly known and received.

* ἀ σπᾶν & ἀγείρειν, to *divide*, and *re-unite again.*

2. Quæry. *If Chymiſtry ought to be called Art or Science? and of its definition.*

Before we enter into the definition of Chymiſtry, it's neceſſary to examine her *genus* and difference, the knowledge of both which is neceſſary, before a true definition of things can be given. We muſt then examine, whether it be an Art or a Science, before we can define it's true *genus*, and ſeek its difference in the object; ſince there is no part more eſſential in its definition. But to avoid difficulties and intricacy, let us in few words explain the differency between Art and Science, and the ſeveral acceptions incident to the name of Chymiſtry,

The differency aſſigned between Art and Science, is only to be taken from the diverſity of their intentional ends or purpoſes: For as it is the only ſcope of a Science to contemplate, and its end to attain knowledge by that contemplation, wherein it doth reſt ſatisfied without putting the mind to a further inquiry: So Art is only bent to operation, and never ceaſeth untill it hath brought the purpoſes of the Artiſt to a deſired accompliſhment. Whence we may infer, that Science is only of ſuch things as are not in our power, and that Art doth buſie it ſelf upon ſuch things as are in our power. This being granted, we muſt know, that as Chymiſtry is of a great extent, ſo it hath alſo ſeveral ends, and that as it hath all the ſphere of Nature for its object, ſome things are under the power and reach of its diſciples, others not; and beſides theſe two kinds of ſubjects, which are wholly of a different nature, there is a third ſort, partly under their power, and partly not: Whence we may in ſome manner conclude, that there are *three Species of Chymiſtry*; the one wholly Scientifical and given to Contemplation, and may be very well termed *Philoſophical*, having only its end in the knowledge of Nature, and of its effects; becauſe it takes for object thoſe only things which are conſtituted out of our power: So that this kind of Chymical Philoſophy, doth reſt ſatisfied in the knowledge of the nature of the Heavens and Stars, the ſource and original of the Elements, the cauſe of Meteors, original of Minerals, and the way by which Plants and Animals are propagated; having not in her power to frame or make any one of all theſe things, but being ſufficiently pleaſed with entertaining her diſcourſe and reaſon upon the cauſes of ſo many various effects. The ſecond *ſpecies* of Chymiſtry may be called *Iatrochymy* of Medicinal Chymiſtry, whoſe only end is operation; but not to be attained, unleſs by the means and helping hand of Contemplative and Scientifical Chymiſtry: For as the art of Phyſick, conſiſts in two parts, Theory and Practice; the former being but a Clue and help to lead unto the other: ſo ſhall alſo *Iatrochymy* participate of both; the end of its contemplating being only Operation, and that operation again purpoſing only the ſatisfaction of her diſciples minds, about the Contemplation both of things that are, and are not in our power. The third *ſpecies* is *Pharmaceutical Chymiſtry*, which hath for its end only operation, belonging to the Apothecary's profeſſion, who is to direct his work by the Precepts and Orders of Iatrochymiſts: ſuch as amongſt the *French* Phyſicians is eminent at this day, *Monſieur Vallot*, firſt Phyſician to his moſt Chriſtian Majeſty, who doth eminently poſſeſs the Theory and Practice of thoſe three *ſpecies* of Chymiſtry which we have ſpoken of. This third *ſpecies* or kind, hath for its object thoſe things which come under our power to operate on them, and extract thoſe different parts which conſtitute the compound thereof. Whence, from all that is above ſaid, we may conclude, That *Chymiſtry* may be called both Science and Art in ſeveral reſpects, and ſo conſequently *a practical or operative Science.*

Thus having found the *genus*, it remains we ſhould find the Difference, to compleat the definition. Some do define *Chymiſtry, The art of Tranſmutations*; others, *The art of Separations*; others, of both Traſmutations and Separations: But as Tranſmutation and Separation are the effects of Chymiſtry, they cannot conſtitute its true and ſpecifical Difference. There are ſeveral other ways of definition uſed by others, but which do all come to what we have already ſaid; therefore we muſt of neceſſity take the Difference from its Object, as it is above deduced. Some Authors make the *object of Chymiſtry* to be, Mixt bodies: but they are deceived; for the Elements which are unmixt bodies, are alſo under the verge of this Science: Others would have it the Natural body; but they alſo are deceived; ſince Chymiſtry hath under its conſideration the univerſal ſpirit, which is diveſted of all corporeity. We ſay then, that Chymiſtry makes all natural things, extracted by the omnipotent hand of God, in the Creation, out of the Abyſſe of the Chaos, her proper and adæquate object. But it is to be noted, that by natural things we do not underſtand bodies only, as they are ſaid to be compoſed of matter and form, but that we mean all created things, though deprived of bodies; and by oppoſing things natural to ſupernatural, there will be a ſufficient diſtinction ſet between the Creatour and Creatures, to take away that reproach wherewith the Profeſſors of this Noble Science, are ordinarily ſpotted and traduced. Chymiſtry is then thus defined, *A practical and opperative Science* (or knowledge) *of things natural.* It is a Science, as is already ſaid, becauſe it contemplates natural things; but becauſe it doth not end or reſt in Contemplation always, but alters ſometimes natural things by the means and help of others, it may be called an operative or practical Science. To make ſhort, It's nothing elſe but Phyſick, or knowledge of Nature it ſelf, reduced to operation, and examining all it's Propoſitions by reaſons grounded upon the evidence and teſtimony of the ſenſes, and not relying upon bare and naked contemplation. This is then the difference between the Chymical Phyſician, or Naturaliſt, and he that follows the Schools, or Dogmatical way; that, if you ask from the former, What parts do conſtitute a body, he will not give you a naked Anſwer, and ſatisfie by words and meer diſcourſe your curioſity, but he will endeavour to bring his demonſtrations under your ſight, and ſatisfie alſo your other ſenſes, by making you to touch, ſmell, and taſte the very parts which enter'd in the compoſition of the body in queſtion, knowing very well that what remains after the reſolution of the mixt, according to the rules of Art, was that very ſubſtance that conſtituted it. But if you ask from the School-Philoſopher, What doth make the compound of a body? He will anſwer you, that it is not yet well determined in the Schools: That, to be a body, it ought to have quantity, and conſequently to be diviſible; that a body ought to be compoſed of things diviſible and indiviſible, that is to ſay, of points and parts: but it cannot be compoſed of points, for a point is indiviſible, and without quantity, and conſequently cannot

not communicate any quantity to the body, ſince it hath none in it ſelf, ſo that the anſwer ſhould have concluded the body to be compoſed of diviſible parts. But againſt this alſo will be objected, If it be ſo, let us know, whether the minuteſt part of the body is diviſible or no, if it be anſwered, Diviſible, then it is inſtanced again, that it is not the minuteſt, ſince there is yet a place left for diviſion: but if this minuteſt part be affirmed to be indiviſible, then the anſwer falleth again into the former difficulty, ſince it returns to affirm it a point, and conſequently without quantity; of which being deprived, it is impoſſible it ſhould communicate the ſame to the body, ſince diviſibility is an eſſential property to quantity. You ſee then, that Chymiſtry doth reject ſuch airy and notional Arguments, to ſtick cloſe to viſible and palpable things, as it will appear by the practice of this Art: For if we affirm, that ſuch a body is compounded of an acid ſpirit, a bitter or pontick ſalt, and a ſweet earth; we can make manifeſt by the touch, ſmell, taſte, thoſe parts which we extract, with all thoſe conditions we do attribute unto them.

Now followeth the third and laſt Query: *What is the end of Chymiſtry?* It is not to be wondered, that ordinary Naturaliſts have attained to ſo little light, in their ſearch and knowledge of natural bodies, ſince they did propoſe to themſelves no other end but contemplation; thinking that it became not them to ſet their hands to the work, thereby to attain a true knowledge of mixt bodies by Chymical Anatomy: They and their Sectators alſo, imagining they ſhould wrong their Gravity and Doctoral State, to defile and ſully their hands with the blackneſs of Coals. Much contrary hath been at all times the practice of Chymical-Philoſophers, though they made, as well as they, Contemplation their end: For they were perſwaded, Practice and Operation were to be joyned, to receive a full delight and ſatisfaction, and lay firm and ſure foundations to their Reaſonings; unwilling to build upon the quick-ſands of vain, frivolous, and fantaſtical opinions; which made them willingly undergo the charges, toil and labour of Practical Chymiſtry; and not be diſcouraged by Watchings, and ill Savours, that they might attain the ſooner to a ſolid and delightful knowledge of the things of Nature, finding by the ſeveral experiments of their Works and Proceſſes, the abſtruſe cauſes of its wonderful effects, wherein they differ very much from the Empyricks; which do, without much reaſoning, confound obſcure and intricate all things.

We do then conclude and affirm, that Operation is truly the general end of Chymiſtry: For the Philoſopher operates, only the better to be able to contemplate; the Iatrochymiſt alſo to diſcover the better by his operation that which Nature performs in the body of a ſound man, that he may be capable to reſtore health, when by ſickneſs it becomes vitiated and diſordered. Laſtly, the *Pharmaco*-Chymiſt operates, only to furniſh wholſom and ſalutary remedies to the ſick Patient, according to the judicious Preſcriptions and Orders of the skilful and learned Phyſician. Is it then to be wondred at, if Chymiſts do beſtow ſo much labour and induſtry in purchaſing this noble knowledge, the perfection of which can never be attained without having firſt anatomized the greateſt part of Nature? For as it is neceſſary to diſſect the humane body, if we will know its organical parts; ſo it is requiſite, before we can diſcover the faireſt and beſt part of natural ſubſtances, which are as it were hidden and involved within a ſecret rinde, that we ſhould open their compoſites. Whence it may be concluded a very difficult matter for any to attain to the exact knowledge of natural things, without the previous guidance of Chymiſtry, & being acquainted with all its parts; neither can any be reckoned a perfect Phyſician without the help of Hermetical Philoſophy, ſince it is the trueſt ground of Phyſick, and without which no Practitioner can deſerve any other title then that of *Empyrick*: For it is not a Gown, or degrees taken in Univerſities, which conſtitute the Phyſician, but a ſolid knowledge of Nature, grounded upon ſound Reaſon and mature judgment, improved by practice and experience. Whence it followeth, firſt, That Chymiſtry doth not meerly conſiſt in the skill of preparing well a Remedy, as many do erroneouſly imagine; but in the uſing of it with due circumſtances, and reſpect to the Theorems of Art, which is properly the true Phyſick: Secondly, that whoſoever meddles with Chymical remedies, without the previous grounds of Theory, can deſerve no other name then of an *Empyrick*, ſince he is altogether ignorant of the internal efficient cauſes of their effects, and cannot give the Phyſical reaſons, why he doth adminiſter ſuch a remedy, for ſuch and ſuch diſeaſe; being not ſufficiently grounded to know that theſe rare preſcriptions of Chymiſtry, have their remedies grounded, not upon the actions of firſt and ſecond qualities, but upon the ſpecifical and internal vertues of their Chymical Principles, as will more evidently appear in the ſequel of this Treatiſe.

A
Compendious Body
OF
CHYMISTRY:

Book I.

Of the Body of Chymiſtry *abbreviated.*

PART I.

Of the Principles and Elements of Natural things.

CHAP. I.

Of the Univerſal Spirit.

THE title of this Chapter doth ſufficiently evidence the error of thoſe who maintain, that the Natural Body is the only object of Chymiſtry, ſince it treats alſo of the Univerſal Spirit, which is a ſubſtance void and diveſted of all Corporeity: hence it is, that with more reaſon, we did aſſign all natural things her adequate object, *viz.* all created things, both corporeal and ſpiritual, viſible and inviſible ; and that becauſe Chymiſtry doth not only teach, how a body may be ſpiritualized, but how a ſpirit alſo may be fixt to become a body. For after having made the general and particular Anatomy of Nature,and ſearched and penetrated to its very center, this noble Science hath found, that the ſpring and root of all things was a ſpiritual ſubſtance, homogeneous and like unto it ſelf, to which ancient and modern Philoſophers have attributed ſeveral names, calling it a *Vital ſubſtance, a Spirit of life, Light, Balſom of life, Vital Mummy, Natural heat, Univerſal Spirit, Mercury of life*; and many more names, which to ſum up all here, would be needleſs,ſince theſe are the principal appellations.

But as our Scope, in this firſt Book, is, to treat of the Principles and Elements of natural things, it ſeemeth to ſtand with reaſon, that we ſhould in the firſt place ſpeak of the firſt Principle, by which the others are principiated ; which Principle is nothing elſe but Nature it ſelf, or that univerſal Spirit, which makes the ſubject matter of this Chaper.

Paracelſus, in his book of Vexations, ſaith , that *Domus eſt ſemper mortua, ſed eam inhabitans vivit* : By which myſterious and figurative ſpeech, he endeavours to teach us,that the ſtrength of Nature is not included in the mortal and and corruptible body ; but that it is to be ſought in that wonderful ſeed which hides it ſelf under the ſhade of the body, who of it ſelf hath no ſtrength or vertue, but fetches it all from that ſeminal ſpirit which it contains ; a thing manifeſtly demonſtrable in the corruption of that body, during which the internal ſpirit doth fabricate it ſelf a new one, yea many new ones, by the deſtruction of the firſt : Which occaſioneth again our *German Triſmegiſtus* to ſay, that the power and vertue of death is efficacious ; for then the ſpirit doth diſingage it ſelf from the bonds of the body, wherein he ſeemed to be fetter'd, and without efficacy, which he beginneth then to declare,when it ſhould ſeem more improbable. This truth is illuſtrated by the grain of Corn rotting in the earth : for the body being opened by that corruption, the internal ſeminal ſpirit therein incloſed, buds out, produceth a blade and ſtalk ,and at the end of it an Ear, containing ſeveral grains of Corn , the very ſame in likeneſs to that which periſhed and was rotten in the ground.

This ſpiritual ſubſtance, which is the primary and ſole ſubſtance of all things, contains in it ſelf three diſtinct, but not differing ſubſtances : For they are homogeneous, as we have already ſaid. But becauſe there is found in it, a heat, a moiſture, and a drought; and all three are diſtinct, but not differing; we ſay, that theſe three are but one eſſence, and the ſame radical ſubſtance; otherwiſe, as Nature is one, ſimple, and homogeneous, if the ſeminal Principles of theſe ſubſtances were *heterogeneous*, nothing would be found in nature one, ſimple, and homogeneous; which cannot be, in regard of the great inconveniencies that would follow: For if heat did differ from moiſture, it could not be nouriſht and fed by it (which is notwithſtanding neceſſary to be granted true) becauſe nouriſhment is performed by things not differing, but of a like nature; and if the aliment ſhould prove in the beginning, different from the alimentated, it would be neceſſary before it could paſs into the ſubſtance of the laſt aliment, that it ſhould be diveſted of all difference and diſſimilar nature. Now it is granted on all hands, that radical moiſture is the laſt aliment of natural heat; whence it followeth, that it cannot be of a different nature: Moreover, if they did differ, each one would endeavour to produce its like, and the inteſtine war, raiſed by this occaſion, hinder the generation of the Compound. Let us then conclude, that this radical and fundamental ſubſtance of all things, is truly and really one in its eſſence, but hath a threefold denomination; for in reſpect of its natural heat and fire, it is called Sulphur; in reſpect of its moiſture, which is the food and aliment of this fire, Mercury; and finally, in reſpect of the radical drought, which is, as it were, the knot and cement of the fire and moiſture, it is called Salt; which we ſhall clear more particularly, when we treat hereafter of theſe three Principles by themſelves, and examine, whether or no the one may be tranſmutated or converted into the other.

Having thus much ſpoken of the nature and eſſence of this univerſal ſpirit, we muſt now examine it's original, and the effects which it doth produce: And for the firſt point, it is not to be doubted, but that this ſpirit hath been created by the omnipotency of the firſt Cauſe, when it extracted this goodly fabrick of the world out of its nothing, and did harbour it in all the parts of this vaſt Machine, as the Poet doth acknowledge, when he ſaith,

Spiritus intus agit, totamq; infuſa per orbem
Mens agitat molem.——

For all the parts of the Univerſe are in continual need of its ſupply and preſence, as we diſcover by the effects; and if any by accident hath been deprived thereof, he immediately returns to poſſeſs it, and taking its place, reſtores life by his arrival. So we ſee, that having extracted from the ſalt of Vitriol ſeveral ſubſtances therein contained, if the dead earth, or *Caput mortuum*, be expoſed to the air, in ſome ſheltred place free from the waſhing of Rain, this ſpirit will not fail to return to it, being potently attracted by this Matrix, whoſe earneſt longing it is to fill it ſelf with this ſpirit, which makes the principal part of all things exiſtent; for as things are only deſtinated to their operation, ſo can they not act, but by their efficient internal Principles. Therefore God, who ever works by the moſt compendious way, and will not every day buſie his Omnipotency in the creation of new ſubſtances, hath once for all created this Univerſal Spirit, and placed it every where, that he might operate all in all things.

And as this Spirit is univerſal, ſo can he not be ſpecificated but by the means of particular Ferments, which do print in it the Character and Idea of mixt bodies, to be made ſuch or ſuch determinate ſubſtances, according to the diverſity of Matrixes, which receive this Spirit in themſelves to make it a body. Thus in a Vitriolick Matrix, it becomes Vitriol; in an Arſenical, Arſenick; a Vegitable Matrix makes it a Plant; and ſo of all the reſt. But two things are here to be noted, the firſt, That when we ſay, that this Spirit is ſpecificated in ſuch or ſuch a Matrix, that we underſtand nothing elſe, but that this Spirit is imbodyed in ſuch or ſuch a Compound, according to the different Idea it hath received, by the means of particular ferment; and that, notwithſtanding, it may be extracted again out of this compound, by diveſting it by the help of Art, of this groſs body, to give it a more ſubtil one, and ſo bring it nearer its univerſal nature, and thus prepared, it doth maniſeſt its own vertues much more eminently. The ſecond thing obſervable is, that this ſpirit cannot return to its indifferency or univerſal nature, without having loſt firſt of all the Idea received from the Matrix, in which it was embodyed: I ſay, it muſt have loſt all this Idea, becauſe although theſe ſpirits have been diveſted of their bodies by Art, they do notwithſtanding preſerve yet, for a while, the character and print of their firſt body; as it evidently appears in an air poyſoned with Realgarick and Arſenical ſpirits, which inviſibly fill it, and do fly up and down; but when it hath quite loſt this Idea, it re-unites it ſelf with the univerſal ſpirit, and if it meets with any fruitful Matrix, being yet impregnated of its Idea, then it embodyes it ſelf in ſeveral different compounds: as it is evident in Plants and Animals, which we ſee produced without ſeed, as Muſhroms, Nettles, Mice, Frogs, Inſects, and ſeveral other things; which to relate here, would be too tedious.

Thus much had we to ſay of the Univerſal Spirit, reſerving to ſpeak of the Matrixes which do ſpecifie and corporifie it, and communicate him the Idea and Character of ſuch a determinate exiſtence or body, where we ſhall treat of Elements hereafter.

CHAP. II.

Of the ſeveral ſubſtances which are found after the Reſolution and Anatomy of the Compound.

WE may conſider three ſeveral ways, the Principles and Elements which do conſtitute the Compound: *Viz.* Or before its compoſition, or after its reſolution, or whileſt they do yet compoſe and conſtitute the Mixt. In the foregoing Chapter we have demonſtrated the nature of Principles, before they enter in the compoſition of the body; now our task is, in this Chapter, to ſhew, what they are after the reſolution, and during the compoſition of the Mixt; which we will do the more ſuccinctly and in general terms at preſent, in regard we ſhall fall again more particularly upon the ſame matter in the following Chapters.

We have ſaid heretofore, that the Univerſal Spirit, which radically contains in it ſelf the three firſt Subſtances, was indifferent and in order to be made all things; and that he was ſpecificated or embodyed, according to the Idea which it took from the Matrix wherein he was received; with the Minerals becoming Mineral, with Vegetables becoming a Plant, and with Animals Animal. Of this Idea we will ſpeak more hereafter, as alſo of the Matrixes which do communicate it to the ſame.

During the compoſition of the Mixt, this ſpirit retains the nature and Idea which it took in the Matrix. Thus if it hath taken the nature of Sulphur, and been impregnated with its Idea, it communicates to the Compound, all the vertues and qualities of Sulphur.

The ſame is to be ſaid of Salt, and Mercury; for whenſoever it is ſpecificated, or (if it may be ſaid without barbariſm) Ideificated in any of theſe Principles, it ſhews it immediately by its actions: Thus things are in their compoſition either fine or volatil, liquid or ſolid, pure or impure; diſolved or co-agulated, and ſo of the reſt, according as this ſpirit contained more or leſs Salt, Sulphur and Mercury, or more or leſs mixture of the groſeneſs and terreſtreity of the Matrixes. But after theſe Principles are ſeparated one from the other, and from the terreſtreity and corporeity which they draw from their Matrixes, they make it plain enough by their powerful effects, that it is in this ſtate they ought to be reduced, before they can work with efficacy, though they retain yet ſtill their character and internal Idea. Thus ſome few drops of the true ſpirit of Wine will be more powerful, then a whole glaſs of this corporeal liquor wherein it was encloſed: A drop of ſpirit of Vitriol ſhall be of more effect then many ounces of the body. But you are to note alſo, that theſe powerful effects and great vertues do laſt no longer in the ſpirits, than the Idea of the Mixt, whence they were extracted, remains with them: For as all things by a natural circulation in Nature, which corporifies to ſpiritualize, and ſpiritualizeth again to corporifie, have a ſtrong tendency to their firſt Principle: ſo theſe ſpirits are ſtill buſie and working, in endeavouring to diveſt and free themſelves of the Ideas wherein they are fettered, that they may return to their firſt Principle, which is the Univerſal Spirit.

Theſe things being ſo cleared, it remains to ſee how many ſubſtances Chymiſtry finds in the reſolution of the Compound, and what they are. *Ariſtotle* ſaith, that the reſolution of things ſhews their conſtitutive Principles: Upon this Axiom, hath its ground and baſis our Philoſophy, both by reaſon of the truth of it, and that Chymiſtry receives no Principles of ſenſible things but ſuch as are obvious to, and fall under the Judicatory of the ſenſes. And as the Anatomiſt hath found a certain number of ſimilar parts, which conſtitute the humane body, whereof he makes the ſubject of his Art; ſo doth the Chymiſt endeavour to find out the number of primary and ſimilary ſubſtances of all Compounds, to exhibit them to the ſenſes, that they may better judge what was their Office whileſt yet joyned in their Mixt, having conſidered their vertue and efficacy, in this purity and abſtracted nature; thence the name of *Senſal Philoſophy* hath been by ſome given to the Chymiſt; For as the Anatomiſt doth make uſe of Raſors and other ſharp Tools in his Diſſections, to ſeparate the better the ſeveral parts of the humane body, which is his chief object: The ſame doth the Chymical Artiſt, fetching his inſtruction from Nature it ſelf, to attain his end, which is nothing elſe but to joyn *homogeneal* and ſeparate *heterogeneal* things by the means of Heat; for he doth nothing elſe but contribute his care and labour, to regulate the firſt according to the exigency of natural Agents and Patients, thereby to reſolve the mixt bodies in their ſeveral ſubſtances, which he ſeparates and purifies afterwards; for the fire never relents or ſlackens its action, but rather drives it on and encreaſeth it, untill he finds no * *heterogeneity* left in the Compound.

After that the Artiſt hath performed the Chymical reſolution of bodies, he doth find laſt of all five kind of ſubſtances, which Chymiſtry admits for the Principles and Elements of natural bodies, whereupon are laid the grounds of its Doctrine, becauſe in theſe five ſubſtances is found no Heterogeneity; theſe are, the Phlegmatick or wateriſh part, the Spirit or Mercury, the Sulphur or Oil, the Salt, and the Earth. Some give them other names; for it is free for every body to uſe their invention in ſuch a caſe, being a thing of no great importance to neglect Names, and leave a latitude of freedom to every one therein, provided you may agree in the ſubſtance.

Now, as the Mixts cannot ſubſiſt in their integrity and perfect ſtate, if you deprive them of any of theſe parts, ſo would alſo the knowledge of theſe ſubſtances prove defectuous, if they were ſeparated one from another: wherefore we are to conſider them, both abſolutely and reſpectively. Three of theſe ſubſtances offer themſelves to our ſight, by the help of Chymical Operation, under the form of a Liquor, which are the Phlegm or Water, the Spirit, and the Oil; the two other in a ſolid body, *viz.* Salt and Earth. The Water and Earth are commonly called paſſive Principles, material and of leſs efficacy then the other three; as contrary wiſe the Spirit or Mercury, Sulphur and Salt, are reckoned active and formal Principles, by reaſon of their penetrative and ſubtile vertue: Some do call the Earth and Water or Phlegm, Elements; and give the name of Principles to the three others. But if that definition which *Ariſtotle* hath given to Principles, is eſſential, *viz.* That *Principia neque ex aliis, neque ex ſe invicem fiant*; Experience doth teach us, that theſe Subſtances cannot properly bear the name of Principles; becauſe we have ſaid above, that Mercury did change it ſelf into Sulphur, moiſture is the aliment or food of heat, and food transforms it ſelf

D 2 into

* Or *Diſſimilar parts.*

into the thing which is fed. Therefore the definition of Elements ſhould rather ſute with theſe ſubſtances, ſince they are the laſt things to be found, after the reſolution of the Compound, and that Elements are, *Ea quæ primo componunt Mixtum, & in quæ ultimo reſolvitur.*

But becauſe the Elements are conſidered two wayes, either as they are parts which do conſtitute the Univerſe, or as they only compound Mixt Bodies; to accommodate our ſelves to the ordinary way of expreſſion, we ſhall attribute unto them the name of Principles, in regard they are conſtitutive parts of the Compound; and ſhall reſerve the appellation of Elements, for thoſe great and vaſt Bodies, which are the general Matrixes of natural things.

CHAP. III.

Of each Principle in particular.

SECT. I.

Wherein is treated, Whether thoſe Five Principles, which remain after the diſſolution of the Mixt, are Natural or Artificial.

CHymical Philoſophy doth admit for Principles of the Compound, thoſe five ſubſtances whereof we have treated above, becauſe as it is a Science wholly ſenſal, it grounds its reaſons only upon what ſenſes do demonſtrate unto her: And becauſe having exactly anatomized a body natural, nothing is found beyond what may anſwer one of theſe five ſubſtances. But here may be a Queſtion moved of no ſmall difficulty, *viz. Whether theſe five Subſtances, are Natural or Artificial Principles, and not rather Principles of Diſunion and deſtructive, than of Compoſition and Mixture?* To this may be anſwered, that it is not a matter of ſmall difficulty, to know whether theſe Principles are natural, becauſe we do not ſee them ſevered from the Compound, by a natural corruption or putrefaction, and that Chymical ſeparation can only be performed by an artificial corruption cauſed by the help of the heat of fire: but if the buſineſs be judiciouſly and narrowly examined, it will appear, that although theſe ſubſtances can only be extracted by the help of Chymical Art, they are notwithſtanding, meerly and purely Natural, ſince Art doth contribute nothing elſe but the Veſſels to contain and receive them. Whence Nature being deſtitute of theſe Veſſels, and we cannot without their help render thoſe ſubſtances palpable and viſible objects of the eye; it cannot ſeem ſtrange, that we ſhould not perceive theſe ſubſtances, in the natural corruption and ſolution of their Compounds: for Nature which is ſtill in action and buſie about productions, makes uſe of the ſaid ſubſtances, and applys them to the generation of ſeveral other exiſtencies, as *Ariſtotle* hath very well obſered, when he ſaith that, *Corruptio unius eſt generatio alterius*. Thence it is, that in the natural putrefaction of bodies, a certain ſmell for the moſt part offends our Noſtrils; a true token of the Air being impregnated with volatile ſpirits, which are Saline and Sulphureous; by which it appears, that the Mixt is radically diſſolved, and thus it is performed: The Salt is diſſolved by the help of the internal Phlegm or Water; and as the Salt is the bond of the two other Principles, ſo can they no longer ſubſiſt in their Mixt or Body, becauſe heat which accompanies all putrefactions, doth ſubtilize and carry them away, ſo that there remains nothing but what is of earthlineſs in the Compound. Therefore we do conclude, that although theſe Principles may not be made ſenſible and manifeſt, but by the Operations of Chymiſtry, it doth not debar them notwithſtanding from being natural, becauſe if nature had not immixed them in all things, they could not indifferently be drawn from all bodies, as we daily ſee that they may; whence we infer, that theſe ſubſtances are not extracted from the Mixt by tranſmutation, but by a meer natural ſeparation, aſſiſted by the heat of the Veſſels and the hand of the Artiſt: for all things cannot indifferently and immediately be tranſformed in the like and ſame things. Therefore it cannot be thought ſtrange, that other ſubſtances then the forementioned five, ſhould be extracted from Mixt Bodies by Chymical Operations, when the way of operating is altered, and proceeds by another way, then by the ſeparation of Principles, ſuch as are the *Quinteſſences*, *Arcana*, *Magiſteries*, *Specificks*, *Tinctures*; *Extracts*, *Fæculæ*, *Balſoms*, *Flores*, *Panacæa's* and *Elixirs*, whereof *Paracelſus* treats at large, in his Books of *Archidoxa*; ſince all theſe ſeveral preparations take their vertues from the various mixture of the Principles, whereof we are to ſpeak in the following Sections, according to the order wherein they fall firſt under our ſenſes. Where we ſhall conſider them both as they yet compound the Mixt or Body, and as they are ſeparated from it.

SECT.

SECT. II.

Of Phlegm or Water.

THat inſipid liquor which commonly is called Water, hath by the Chymiſts the name of Phlegm given unto it, when it is ſeparated from all other Mixture; it is the firſt ſubſtance obvious to the eye, when the fire doth act upon any Mixt body; it appears firſt in the ſhape of a vapour, and by condenſation turns into liquor: Her preſence is as neceſſary as any other Principle in the compoſition of the Mixt: And we do not agree with the opinion of thoſe who hold it to be needleſs, provided the proportion and harmony required in Natural bodies be preſerved: for Phlegm is as the curb and rains of ſpirits, which dulls and allays their ſharpneſs, diſſolves the ſalt, and weakens its corroſive acrimony, hindreth the inflamation of Sulphur, and bindes the Earth, and mixes it with the Salts; for as theſe two laſt Subſtances are brickle, crumbling and dry, ſo could they give but little firmneſs and conſiſtency to the body without the help of this liquor: Thence it comes, that corruption and diſſolution are introduced by its abſence, which hath occaſioned ſome to call it *the Principle of Deſtruction*; for it eaſily vapours away, which is the cauſe that the Mixt cannot long ſubſiſt in the ſame ſtate and harmony, becauſe this Principle being part in the body, eaſily and at every hour exhaleth it ſelf and vapours away, which makes it obnoxious to the leaſt outward injuries, procured as much by internal as external cauſes. Therefore thoſe that do work about the preſervation of Mixts, make it their ſtudy to preſerve this Principle in the Compound; becauſe it is he that keepeth all the other linked together, as it evidently appears by the operations of our Art: It can endure ſeveral alterations, without changing its nature; for if ſometimes it turns it ſelf into vapours, they are notwithſtanding eſſentially nothing elſe but the very Phlegm it ſelf. And here you ſhall note, that vapours are of a different nature; ſome are meerly aqueous and Phlegmatick; others ſpirituous and Mercurial, others Sulphureous and Oily; and laſtly, ſome participate of theſe three qualities together. It is moreover to be noted, that even the Salts, and Mineral and Metallick Earths, may be ſubtilized yet and turned into vapours differing from the aforeſaid four qualities, yielding fix and ponderous ſpirits, and flowers. Briefly, the Doctrine of fiery, aqueous,

ous, and aerial Meteors, may very well be related to the nature of theſe vapours and exhalations: For we ſee that aqueous vapours are eaſily condenſed in water in the Limbecks, which the Spirituous or Oily are not, as requiring much more time and cooling; whence many conſequences may be drawn, tending to the uſe of Phyſick, and particularly in the cure of thoſe pains, which are thought to proceed from vapours and exhalations, and vulgarly are called Meteoriſms, or griping vapours of the Ventricle and Spleen: For aqueous vapours cannot cauſe ſo much diſtention, becauſe they are ſooner compreſſed and condenſed, then thoſe which proceed from the Spirits, Oils, and mixt Salts, Now as too much Phlegm doth extinguiſh the natural heat, and ſlackens the body, and dulls all his functions: ſo the too ſmall proportion thereof, cauſeth as it were a burning and corroſion of it, whileſt the Sulphur and fixed Spirit of Salt becomes predominant; an evident proof that the frame of mixt bodies doth only ſubſiſt by the harmomy and juſt proportion of all its ſubſtances. To conclude what we have ſaid of this Principle, you are to obſerve, that the Phlegm or wateriſh part of any Mixt, is ordinarily the fitteſt *Menſtruum* to extract the tincture and Extract thereof, becauſe it is endowed ſtill with ſome character of its Compound, and ſome Idea of its vertue and faculty: but chiefly becauſe it is for the moſt part accompanyed with the volatile Spirit of the Mixt, whereby it is rendred more capable eaſily to penetrate the ſame, and to extract its vertue, being partaker of a mixt nature of moſt ſubtile Sulphur and Mercury, which comes very near to the Univerſal.

SECT. III.

Of the Spirit.

SOme do call Mercury that ſecond ſubſtance which falls under our ſight in the Anatomy of the body; Others name it *radical Moiſture*, but we ſhall keep the appellation of *Spirit*, as the moſt in uſe. Notwithſtanding, to avoid error and miſtake in theſe vulgar names of Principles, and that the Reader ſhould not confound them with the appellations of Compounds; it is neceſſary to inform him, that they have received ſuch names, only for the likeneſs & correſpondency they have with thoſe ſubſtances from which they are denominated: See therefore you do not miſtake Phlegm for Pituite, Mercury for Quick-ſilver, and Sulphur for ordinary Brimſtone, which is an ingredient in the compoſition of Gun-powder, mixed with Saltpeter; nor Salt for that common Salt familiar to our Tables, and much leſs Earth for ſuch a ſubſtance as is Bol-Armeny or *Terra ſigillata*, ſince all theſe are Bodies, compoſed of the ſame Principles, every one as we deſign by thoſe names. *Spirit* then is nothing elſe but that aerial, ſubtile, penetrating, active ſubſtance, which we draw out of the Mixt Body, by the help of fire; whence it is to be concluded, that this Principle in it ſelf is one, unmixt, and homogeneous, having taken its Idea from the character of its ſpecifick and particular Matrix, as we ſhall deduce hereafter more at large, when we ſpeak of the Elements, and their vertues, in the following Chapter. This ſubſtance of the Spirit is conſidered, either as it compoſeth yet the Mixt, or as it is ſeparated from it: Separated, it is very penetrating; it cuts, opens, and attenuates the moſt ſolid and fixt Bodies, it excites heat in Fermentation, untyeth the bonds of Salt and Sulphur, and makes them ſeparable, reſiſts corruption and rotteneſs; yet by accident may be the cauſe of it; devours the Salt, and ſeiſes ſo greedily upon it, that it can ſcarce be ſeparated but by an extreme violence of the fire: It is poſſeſſed of its own heat, and cold, for it doth not act by Elementary, but by his own proper and ſpecifick qualities: To be brief, we fall ſhort of proper terms to expreſs duly his nature; ſince it is a true *Proteus*, which turns himſelf in all ſhapes, and as the Sun drys and moiſtens, whiteneth and blackens, according to the diverſity of ſubjects upon which it worketh. This ſame Spirit communicates ſeveral Noble qualities to the Phlegm; for it preſerves him from corruption, makes it penetrative, and endoweth him almoſt with all his own activity: And in requital, the Phlegm doth ſoften and bridle the fury of the Spirit, and makes it ſo tractable, that it may become uſeful in a thouſand ways.

Now whileſt this Spirit remains in a due harmony, and doth not exceed the terms of his Office in mixt Bodies, it becomes to them very ſerviceable, hindering the encreaſe of excrementitious matters, and of all other ſubſtances which may prove contrary or hurtful to the nature of the Compound, multiplying his ſubſtance, and ſtrengthning all his faculties, and that in Animals, Vegetables and Minerals. But if by the power of ſome other Agent, this Principle is forced to exceed the condition and conſtitution of the Mixt wherein it is, it alters the whole frame and œconomy of its Compound, as we ſhall ſhew more at large, when we come to treat of the Principles of Deſtructives.

SECT.

SECT. IV.

Of Sulphur.

THis Principle, as well as the others, hath received ſeveral names; for it is called Oil, Natural Fire, Light, Vital Fire, Balſom of Life and of Sulphur, and beſides, many other appellations have been given by the Sons of Art, with which we will not fill up this Section: According to our uſual cuſtom, we will content our ſelves, with examining the nature of the thing, leaving the nicetie of Names to the over-curious.

That ſubſtance then, which ſometimes we will call Oil, ſometimes Sulphur, is the third in order of thoſe we extract by the artificial reſolution of the Compound; we give it this name becauſe it is an Oleagineous ſubſtance, which eaſily takes fire, being of a combuſtible nature, by whoſe means alſo the Mixts are rendred ſuch. It is called Principle as well as the others, becauſe being ſeparated from the Compound, it is homogeneous in all his parts, as the other Principles are. This Subſtance is alſo conſidered two ſeveral ways: For being looſened from the others, it ſwims above the Phlegm and Spirits, becauſe it is lighter and more ætherial; but if it be not abſolutely ſeparated from the Salt and the Earth, it will ſometimes precipitate it ſelf to the bottom, or ſwim in the middle, becauſe the Sulphur ſupports and holds up the Earth and Salt, untill it be overcome by their weight; it receives not eaſily nor willingly the Salt, without being firſt joyned with the Spirit, or before the Salt be circulated with the Spirit, wherewith it hath a great ſympathy; and then they eaſily receive the Sulphur together; a thing very well worth noting, ſince without this obſervation, no *Panacæa*'s, *Magiſteries*, *Eſſences*, *Arcana*'s, nor other moſt ſecret Remedies, which are unknown to vulgar Phyſicians, and *Galenical* Apothecaries, can be made: no more then theſe can give a reaſon of the nobleſt natural effects; becauſe for the moſt part they aſſign them to the four firſt or primary Qualities.

This Sulphur is of the matter of thoſe fiery Meteors, which are kindled in the ſeveral Regions of the Air, and are ſometimes found in the Cavities of the Earth, and chiefly in thoſe places, where Minerals and Metals are generated; it reſiſts to Cold, and never congeals, being the Principle of Heat; it never ſuffers corruption, preſerves from it thoſe things which are immerſed in it, preventing the penetration of Air, it ſweetens the acrimony of Salt, by whoſe help it is fixed and coagulated; doth ſo powerfully blunt the ſharpneſs of Spirits, that the moſt ſtrong Waters have no power over it, nor thoſe Bodies where it abounds. His Office is, to bind and allay the Earth which is but duſt, with the Salt in the frame of Mixt Bodies: It cauſes alſo the ſtrict union of the other Principles, moderating the too great dryneſs of Salt, and fluidity of Spirit, and finally by his means, theſe three Principles grow into a viſcuous compact ſubſtance, which often times hardens afterwards, by the mixture of the Earth and Phlegm.

Sect. V.

Of Salt.

THe Phlegm, Spirit, and Sulphur, are volatile Principles flying from the Fire, which makes them aſcend, and ſublimate into vapours; whence it followeth, that they were unable to endure the Mixt with a requiſite ſolidity for its duration, unleſs there were ſome other fixt and permanent ſubſtances joyned unto it; of which we find two wholly differing from the others in the laſt diſſolution of bodies. The firſt is a plain and unmixt Earth, without any remarkable quality, except it be dryneſs and heavyneſs: The ſecond is a Subſtance; which reſiſts fire, and diſſolves in water, known to Chymiſts by the name of *Salt*.

Theſe two ſubſtances, which are as it were the baſis and foundation of the Mixt, though confounded by the action of fire, are notwithſtanding two ſeveral Principles, in which are to be found ſuch eſſential differences, that there is between them no Analogy. The ſalt doth manifeſt it ſelf by his qualities, which are as numberleſs as efficacious and powerful, much more without compare then the Earth, which is almoſt without action or vertue.

The Salt being exactly ſevered from the other Principles, offers it ſelf to our ſenſes in a dry, crumbling, and brickle body, eaſily reduced to powder, a certain ſign of his external drought; but it is endowed alſo of an internal moiſture, witneſs its fuſibility; it is fixt, and incombuſtible, reſiſting to fire, wherein it grows purer, ſuffereth no putrefaction, and is (as it were) eternal, being capable to preſerve it ſelf without alteration. This ſubſtance is thought by ſome, to be the firſt ſubject and cauſe of all ſavours, as the Sulphur of odours, and Mercury of colours; but we ſhall refute this Aſſertion, when we come to handle this Subject hereafter.

Salt is eaſily diſſolved in moiſture, and being diſſolved bears up the Sulphur, and joyns it to it ſelf by the means of the Spirit. The uſefulneſs of it is very great; for it hinders fire from conſuming haſtily the Oil; which is the cauſe that floated Wood doth not yield a long flame, being deprived of the greateſt part of its Salt: It is ſalt which makes the earth fruitful, being with the Oil, inſtead of a vital Balſom to Vegetables; and thence it comes, that Grounds too much waſhed with rain, loſe their fertility: It conduceth alſo to the generation of Animals, and hardens Minerals alſo, and giveth them their conſiſtency: But you are to note, that all theſe effects do only follow, when it is diſpenſed in Bodies, with a juſt proportion; for if it exceeds, generation and encreaſe are thereby hindered, becauſe it corrodes and deſtroys with his acrimony, whatſoever the other ſubſtances can produce.

But that you may not be deceived by the ambiguity of the word *Salt*, you are to know, that there is a certain Central Salt, radical Principle of all things, which is the firſt body wherewith the Univerſal Spirit cloſeth it ſelf, and contains the other Principles; ſome have called it *Hermetical Salt*, becauſe, ſay they, *Hermes* was the firſt that ſpoke of it: but it may be more properly and lawfully called the *Hermaphroditical Salt*, becauſe it participates of all natures, and is indifferently inclined to all. This Salt is the fundamental ground of all Nature, being the Center where all her vertues do meet, and the true ſeeds of all things, being nothing elſe, but a congealed, well digeſted and concocted Salt: The truth of which evidently appears in this, that if you boil in water any Seed whatſoever, it becomes immediately barren, becauſe this ſeminal vertue conſiſts in a very ſubtile Salt, which diſſolves and vaniſhes in the water; whence we learn, that Nature beginneth the production of all things by a central and radical Salt, which ſhe extracts out of the Univerſal Spirit. The difference between theſe two Salts is, that the firſt breeds the other in the Mixt, and that the *Hermaphroditical* Salt is ever a Principle of Life, and the other proves ſometimes a Principle of Death. But becauſe we are to treat hereunder, of the Principles of death and deſtruction, we ſhall not inſiſt in theſe Sections upon the effects of either, becauſe the knowledge of Contraries being the ſame, they ſhall be more illuſtrated when oppoſed one to another.

SECT. VI.

Of the Earth.

THe Earth is the laſt of Principles, both of fixt and volatile ; it is a naked ſubſtance, diveſted of all manifeſt qualities, except dryneſs and aſtringency ; for as concerning Weight, we ſhall ſpeak of it hereafter : I ſay, manifeſt quality, becauſe this Earth retains always in it ſelf, the indelible character of that vertue ſhe was once poſſeſſed with, *viz.* of embodying or corporizing, and Ideifying the Univerſal Spirit. The firſt Idea ſhe imparts to it, is that of *Hermaphroditical* Salt, which reſtores to this Earth, her firſt Principles, ſo that the mixt is as it were by it reſuſcitated, ſince from the ſame body, the ſame ſpecifical Principles, which by Chymical ſeparation were before ſeparated, may be extracted again ; as we ſhall explain hereafter more at large, when we come to treat of this matter. Let us conſider at preſent, the uſefulneſs of this ſubſtance, very neceſſary in the Compound of the body, ſince it is by her means that it receives firmneſs and conſiſtency : For being united to the Salt, it cauſes preſently the corporeity, and conſequently, the continuity of the parts : Mixt with the Oil of Sulphur, it cauſes tenacity, viſcoſity, and lentor, *i. e.* ſlowneſs in motion ; it yields then with Salt, hardneſs and firmneſs ; for as Salt is of a brickle and crumbling nature, and eaſily reduced to duſt, it could not intimately be united to the earth, to give it a ſolidity, but by the help of moiſt and liquid ſubſtances. The inconveniencies of this Principle are manifeſted in this, that the Mixt requireth abundance of the other ſubſtances : For when Earth doth predominate, it makes the body heavy, ſlow, cold and ſtupid, according to the nature of Compoſites, wherein it doth abound.

But you ſhall notwithſtanding take notice, by the By, that it is not the ſole Earth which cauſeth the heavineſs of the body, as thoſe Philoſophers do aſſert, who are little acquainted with our hardy-work : For we find more Earth in a pound of Cork after its reſolution, though it be a very light body, then in three or four of *Box* and *Guaiacum*, which are ſo heavy, that (againſt the nature of other Woods) they can ſcarce hold above water : Whence we muſt of neceſſity conclude, that the greateſt heavineſs and weight of Bodies, proceeds of Salt and Spirits abounding in theſe Woods, whereof Cork is deprived. It is alſo experimentally ſeen, that a Glaſs filled with Spirit of Vitriol, or ſome other ſharp Spirit well rectified, ſhall outweigh two or three Glaſſes of the ſame bigneſs, filled with water, or any other like Liquor. I know it will be objected againſt this Experiment, that the heavineſs of *Guaiacum* proceeds from the compactedneſs of its ſubſtance, almoſt impenetrable to Air, and that the lightneſs of Cork doth proceed from the great quantity of big and large pores it hath, which are filled with that light Element, and cauſe it to ſwim above water, contrarily to *Box* and *Guaiacum*. But this Anſwer is not fully ſatisfactory; for if levity and heavineſs are cauſed by rarefaction and condenſation, it will follow thence, that thoſe many pores in Cork, muſt proceed from the abundance of earth in it, and the defect of the other Principles; and hence it will be concluded neceſſarily, that Earth is porous of it ſelf; and ſecondly, that it cauſeth poroſity in Bodies: For the Axiom is true, *Nihil dat quod non habet*; &, *Propter quod unumquodque eſt tale, illud eſt magis tale*, ſay the *Peripatetick* or Ambulatory Philoſophers; and ſo ſhall they be forced to aſſert by their own reaſon, though contradictory to their Maxims, that Earth cauſeth not only the levity of Mixts, but that it is alſo light of its own nature, which in their Philoſophy ſhould be a Monſter: and contradicts alſo to experience; for of all the Principles, when they are duly and according to Art ſeparated one from the other, none is heavier then the Earth, which ever ſubſideth in the bottom of the Glaſs, when they are mixt together.

To come out of this Labyrinth, a higher Philoſophy is required, and fair *Ariadne*, which is *Nature* it ſelf, muſt be courted, to obtain this Clue, and find the iſſue of its winding paths; which if we can happily attain to, we ſhall be taught by the operations of Chymiſtry, that there is two ſorts of levity and heavineſs, the one internal, the other external; the one found in the Principles, whileſt they yet compound the Mixt, the other when they are ſeparated aſunder.

CHAP.

Chap. IV.

Of Elements in General and Special.

Sect. I.

Of Elements in General.

THE difference which *Peripateticks* make between Principle and Element, is, as they ſay, that Principles cannot take one anothers nature, neither be metamorphoſed or tranſmuted the one into the other; but that Elements are Subſtances which of themſelves are compounded of Principles, and do compound the Mixts afterwards at their turns, and ſo theſe ſubſtances can eaſily paſs one into anothers nature; the truth whereof we ſhall examine hereafter. But in *Hermetical Philoſophy*, Elements are taken for thoſe four great Bodies, which are as it were the Matrixes, containing in themſelves, the vertues, ſeeds, characters and Idea's imparted to them by the Univerſal Spirit. But before we enter into this kind of Philoſophy, after we have ſpoken in the foregoing Chapter of the nature of Principles, we muſt now treat in this of Elements; where we will firſt examine, what reaſon the *Galeniſts* have to ſay, that Mixt Bodies are compounded of thoſe Elements, and whether there are not more ſubſtances found in their Diſſolutions, then thoſe which their Books make mention of.

They ſay, that when Wood is burned in the Fire, four ſubſtances do manifeſtly occur to the ſenſes, and do aſſure us, that theſe are the four Elements, which did conſtitute the Mixt before it was deſtroyed by the fire. Let us examine, whether they have diſcovered all, and left no occaſion unto us of farther inquiry.

Their reaſons are grounded upon the following experience: The four Elements, ſay they, are made manifeſt to our ſenſes, when the Wood comes to be examined and conſumed by Fire; for the Flame repreſents the Fire, the Smoak Air, the Moiſture iſſuing from the ends of the Wood Water, and the Aſhes Earth; whence they draw this conſequence, That ſince we ſee but thoſe four ſubſtances, there was none other that could conſtitute the Compound. But, though we grant thoſe four to be all what can appear in ſo groſs an operation; yet, if we will proceed with more Art and exactneſs, we ſhall not want to find ſomething more in it: For if you take the pains to encloſe ſhreds or filings of Wood in a well luted Retort, and fit a capacious Recipient to it, and give a graduate and regular fire, you ſhall diſcover two ſubſtances, which without this Art cannot fall under our ſenſes, and this is the Apple of Diſcord between *Peripatetical* and *Hermetical* Philoſophers: Which before I proceed further, I will endeavour to reconcile. To this end, we grant to both Parties, that Principles and Elements, are found in all Mixts; but let us ſee how. When the firſt ſay, that the Smoak in burning Wood repreſents the Air, we ſay they are in the right, for it is only by way of Analogy and ſimilitude, that this Smoak can obtain the denomination of Air; For it is not really Air, ſince experience ſheweth us, that this ſmoak impriſoned in a Recipient, hath qualities very much differing from that of Air; whence we infer, it can be called Air, only by Analogy. And this is the point in which both do differ, concerning this ſubſtance, that the *Peripateticks* call it *Air*, and Chymiſts *Mercury*: Let them diſpute of the words, provided we do agree in the thing it ſelf.

We come now to the other Element of *Peripateticks*, *viz.* Fire, and the other Principle of Chymiſters, Sulphury, which we are to examine, and ſee in what they agree, and wherein they differ. The firſt ſay, that in the action of Fire preying upon Wood, its action is maniſeſt to the ſenſes. But our anſwer to this ſenſible experiment is, that whatſoever deſtroys the Mixt, cannot be a conſtitative Principle of it, but rather a Principle of deſtruction: If they return, That no fire is actually in the Mixt, but only potentially: therein we will cloſe with them, and reconcile them with the Chymiſts, who name their Sulphur that potential fire of *Peripateticks*. To end then their Controverſie, I ſay, that the fire which we ſee to iſſue out of burning Wood, is nothing elſe but the Sulphur of Wood actuated; for the actuating of Sulphur doth conſiſt in its inflamation. As for the Aſhes which they will have to be the Element of Earth; that Salt which by waſhings and Elixivation is extracted out of them, ſhould ſufficiently perſwade theſe Philoſophers, that the Chymiſts are as well, if not better, grounded in eſtabliſhing the number of their Principles.

The number then of Principles and Elements which compound Mixt Bodies, being thus cleared, it remains for us to ſay ſomething of the Elements, both as to their number and propriety, before we ſpeak of them ſeverally, as alſo of their Matrixes and Fruits.

It is a thing to be wondred at, that the Sectators of *Ariſtotle*, ſhould not yet ſince ſo long a time that his Writings and Philoſophy are in credit, have determined the number of Elements: For ſome amongſt them with great reaſon do affirm, that there is no Elementary Fire; I ſay, with reaſon, if it be underſtood in their own ſenſe: for, to what purpoſe is it to admit an Element of Fire under the ſphere of the Moon, ſince we aſſign to it no other uſe then to enter in the Compound of Mixt Bodies; and that, beſides that Element ſo placed, is at too great a diſtance from the place where Mixts are generated, we have found that the fire in them is nothing elſe but their Sulphur: therefore I do conclude here, with *Paracelſus*, that there is no other Elementary fire, but the Heaven it ſelf, and its light.

As touching the general proprieties of Elements, two Quæries uſe to be made on them: The firſt, If they are pure; the ſecond, If they are tranſmutable one into the other. Concerning their purity, I anſwer, that if they were ſuch, they ſhould prove of no uſe; for a pure Earth were barren, ſince it ſhould have in it ſelf no ſeeds of procreation and fruitfulneſs; and the brine of the Sea, and ſeveral qualities of the Air, ſufficiently confirm this Aſſertion. But as concerning their mutual tranſmutation of one into the other, it is not ſo eaſily performed as vulgar Philoſophers do imagine, though we cannot ſay it to be abſolutely impoſſible: For they teach, that Earth is changed into Water, Water into Air, Air into Fire, and finally that Fire by another tranſmutation returns into Earth: Becauſe, although Earth and Water do ſometimes aſſume and take the ſhape and form of Exhalations, yet theſe vapours are always eſſentially Water or Earth, as it is made plain by their re-aſſuming their firſt nature. This change then cannot happen, unleſs ſuch or ſuch Element being totally ſpiritualized, comes to loſe its Elementary Idea, and to be reunited afterwards to the Univerſal Spirit, who might then give him the Idea of another Element, whoſe body he might have, by the character imprinted by the Matrix.

For this reaſon do Chymiſts aſſign two natures to Elements, in their deſcription of them; *viz.* the one Spiritual, the other Corporal; the vertue of the one being hidden in the boſom of the other. Hence it comes, that when they will have any thing to act efficaciouſly, they endeavour as much as in them lies, to deveſt it from its Body, and ſpiritualize it: For as Nature cannot communicate its Treaſures unto us, but under the ſhade of Bodies, ſo can we do no more then to deveſt them by the help of Art from the groſſeſt and moſt material part of that Body, to apply to our uſes: for if we urge them, and ſpiritualize too much, ſo as that they ſhould fly from our ſight and contact, then do they loſe their bodily Idea and character, and return again to the Univerſal Spirit, to re-aſſume after ſome ſpace of time their firſt Idea, or ſome other differing from it, by the character and Idea of ſuch or ſuch a Matrix, incloſed in ſuch or ſuch part of ſuch or ſuch Element.

Theſe are the true effects of Elements, which are, as we have ſaid, to corporifie or identifie the Univerſal Spirit, by the ſeveral ferments contained in their particular Matrixes, and to give it thoſe characters which they had imprinted in themſelves; for, as we have ſaid, this Spirit is undermined to all things, and may be made all in all. This happens, becauſe Nature is never idle, but perpetually in action; and as it is a finited eſſence, ſo can it neither create nor annihilate any other, becauſe ſuch an act belongs only to an infinite power. But this matter being of too large an extent to be treated of here, we ſhall refer it to the following Sections, where we ſhall particularly treat of Elements, which are the Univerſal Matrixes of all things, where alſo we will ſpeak of particular Matrixes, that imprint the Idea's and characters to the Spirit, whereby ſo many fruits are produced, which daily fall under our uſe, by the help and means of natural fermentations.

SECT. II.

Of the Element of Fire.

SInce all things tend to their Center, and place of their natural reſt, it is a manifeſt ſign that they are thereunto inclined and drawn, by a natural vertue, hidden under the ſhade of their bodies; this vertue can be nothing elſe, but that Magnetick faculty wherewith each Element is endowed, to draw its like to it ſelf, and repel its contrary: For as the Load-ſtone attracts the Iron of one ſide and rejects it of the other, the Elements do likewiſe by a like power attract thoſe things which correſpond with their nature, and repel and drive away from them, thoſe that be of a different: ſince then fire aſcends, it is not to be doubted but that this effect doth proceed from a tendency it hath to its natural place, which is Elementary Fire, where it is carryed by its own proper ſpirit, when it forſakes the commerce of the other Elements.

To underſtand well this Doctrine, it is firſt to be known, that the Element of Fire is not encloſed under the ſphere of the Moon, as we have already hinted above, and that conſequently no other Fire can be admitted, then the *Æther* or Heaven it ſelf, which hath its Matrixes and fruits, as the other Elements. For that great number of Stars which we ſeen moving in that vaſt Element, are nothing elſe but particular Wombs or Matrixes, where the Univerſal Spirit takes a very perfect Idea, before it deſcends to incorporate it ſelf in the Matrixes of the other Elements; and thence may be illuſtrated the ſenſe and meaning of that Axiom of the *Great Hermes*, which many look upon as a *Chimæra*; that, *Nihil eſt inferius, quod non ſit ſuperius & vice verſa*; and that opinion of *Paracelſus*, who doth affirm, That every thing hath its peculiar Heaven and *Aſtrum*: For to ſpeak true, the vertue of all ſublunary things cometh from Heaven, by the means of that Spirit whereof we have already ſo much ſpoken. *Paracelſus* names the knowledge of this Doctrine, *Pyromancy*, eſpecially when he treats of the *Theory of Diſeaſes*; for we ſee that Elements are as it were the Receptacles and Domicils of all thoſe things that are endowed with an intellectual, ſenſitive, or vegetative knowledge, or alſo Mineral, which ſome do call the fruits of Elements: And according to that Doctrine, it is not to be doubted, that as the Heavens are moſt perfect and ſpiritual, ſo they are the Manſion and Receptacle of thoſe ſpiritual and perfect ſubſtances which are called Intelligences.

But you muſt note, that when I have ſaid, that Fire in its aſcent doth forſake the commerce of other Elements, that I have ſo ſpoken, only becauſe the viſible Fire which we uſe on our Hearths, is nothing elſe but a Meteor or Body imperfectly mixt of ſome Elements or Principles, wherein Fire or Sulphur are predominant, and its flame an oleagineous and ſulphureous ſmoak kindled; and when fire is ſpiritualized by that forſaking, it never ceaſeth till it hath returned to its natural place, which of neceſſity muſt be above, and beyond the Air, ſince we ſee it in the Air it ſelf in a perpetual action, as willing to forſake it. It is alſo by the means of this fire, which is ſtill aſpiring to its Center, that the Clouds, which are hot and moiſt Vapours, or Meteors, compounded of Fire and Water, aſcend to the ſecond or middle Region of the Air, where the fire forſaking the water to aſcend ſtill higher, and ſo this Water finding it ſelf deſtituted of the Fire, which did bear it up in the Form of a Vapour, is forced to fall back in the form and ſubſtance of *rain*.

And here you are to note that Circulation, which Nature makes by the means of that Univerſal Spirit, already deſcribed; for as its power is limited, and that ſhe can, neither create nor produce any new thing, ſo can ſhe neither create nor annihilate any ſubſtance already created; as for Example, The continual Influxes of Heaven and its Stars, do inceſſantly produce the Fire or Spiritual Light, which beginneth firſt to embody it ſelf in the Air, where it takes the Idea of *Hermaphroditical* Salt, which thence falls in the waters and upon the earth, where it takes a body, either Mineral, Vegetable, or Animal, by the character and efficacy of ſome particular Matrix, imprinted in it by the action of its ferment; And when this body comes to be diſſolved by the means of ſome potent Agent, its Sulphur, Fire or Light corporified is ſo depurated, that the Stars attract it for their food; for the Stars, (as we ſuppoſe) are nothing elſe but a Fire, a Sulphur, or ſome moſt pure Light actuated: Not unlike the link of a Lamp, which once being lighted, doth continually attract the Oil to feed its flame: ſo that the Stars in the ſame manner attract this fire, which is depurated by that action, and ſpiritualize it anew, to precipitate again by their kind influency, and reſtore it to the Air, the Water, and the Earth, to corporifie it, or give it a body again: Thus you ſee nothing is loſt in Nature, which maintains its great work, and wheel, by theſe two principal actions, *viz.* By ſpiritualizing, to corporifie, and corporifying to ſpiritualize, as we have already ſaid; and theſe are as two Ladders, whereby the heavenly influences deſcend down, and re-aſcend again from the lower parts: for the Heavenly vertues ſhould not be ſo durable, and would daily decay, by reaſon of the perpetual Conflux of ſo many productive ſubſtances, without this conſtant Circulation; unleſs that without any neceſſity we would admit a perpetual creation and deſtruction of ſublunary ſubſtances, which could not be without a Miracle, and being a thing of daily courſe, might be called a miracle without miracle, and ſo imply a maniſeſt contradiction: What Spring do you think could ſupply the matter which feeds thoſe vaſt *Ætnean* flames, which have laſted already ſo many Ages, were it not for this Circulation of Nature? And what could ſince ſo many years entertain the ſtreaming ſources of thoſe mineral, hot, and acid Fountains which the World doth afford in ſo many places, unleſs it were by the help of this wonderful Ladder, and concatenation of Earth and Heaven: Therefore it muſt not be held totally impoſſible to make a Body turn wholly into Spirit, and reduce that Spirit again to Body; for you know, that Art applying

Actives to Paſſives, may in a very ſhort time perform that, which Nature muſt be long buſied about: And becauſe that artificial Circulation which was performed in an ancient Sepulcher found out at *Padua*, doth not ill repreſent that Natural Circulation, or Circulation of Nature, whereof we have ſpoken, it will not be amiſs to inſert here in few words the hiſtory of it; *Appianus* in his Books of Antiquities, relates it thus: That in the Town of *Padua* was diſcovered a very ancient Monument, wherein, being opened, a burning Lamp was found, which had been there kindled many Ages before, as by the Inſcriptions of it did appear. This fire could not poſſibly be maintained, but by Circulation, and ſo it is eaſie to conjecture how it was done; *viz.* The Oil ſpiritualized by the heat of the burning and kindled Taper, did condenſe it ſelf at the top, and ſo fall again into the ſame place whence it had been elevated. The Taper likely was made of Gold *Talcum* or *Alumen Plumeum*, which are incombuſtible; and the Urn was ſo exactly cloſed, that the leaſt particle of Oleaginous vapours could not breath out.

Sect. III.

Of the Element of Air.

PHiloſophers have been long in doubt, whether there was an Element of *Air*, and whether that ſpace wherein Animals do move and live, was not void of all ſubſtance; but the invention and uſe of Bellows, and the neceſſity of reſpiration, have at laſt aboliſht this error. Therefore, there is no debate or difference between *Chymiſt* and *Peripateticks* at preſent, concerning the exiſtency and place of this Element; but they agree not amongſt themſelves concerning its uſe in Nature: for theſe laſt do make the Air to bear a part in the compoſition of Mixt Bodies, which the former utterly reject and deny, becauſe it never falls under their ſenſes, in the laſt reſolution of the compound. The chief uſe which *Chymiſts* do aſſign to this Element, is, that it ſerves as Matrix to the Univerſal Spirit, which doth begin in it to take ſome bodily Idea, before it be wholly corporified in the Elements of Water and Earth, who produce Mixt Bodies, that are as fruits of the ſaid Elements. And becauſe we ſee no Element which doth not bear and produce its fruits, ſome have been forward to affirm, that Birds were the fruits of the Air. But this opinion is wrong and erroneous; for although theſe Birds be volatile, and for the moſt part abide in the Air, yet can they not be deprived of Commerce with the Earth, either for the neceſſity of generation or food: They that maintain Meteors to be the right fruits of the Air, are much more in the right, ſince they take in it their true Meteorick Idea.

Some do call that part of Philoſophy, which concerns the knowledge of Nature, the fruits and effects of this Element, *Chormancy*, but it is corruptly, and by a miſtake inſtead of Aeromancy; for Chormancy is ſomething more general, and more univerſal: ſince it is the Doctrine and knowledge of the Chaos, which is to ſay, this great Matrix, whence all the Elements have been drawn: it is the *Tohu* and *Bohu*, or the *hyle of Cabaliſts*, which in Holy Scripture is called Water, where it is ſaid, that *the Spirit of God did move upon the Waters*, or rather lay hovering over the Waters, * as a Hen doth over her Brood, *Spiritus Dei incubabat aquis*.

* So much doth import מרחפת in the Original.

But a queſtion may here be moved, that whereas we have ſaid above, that Elements cannot but difficultly quit their own nature to put on that of another Element, how it comes to paſs, that Air is ſaid to be the food and aliment of Fire, and that in reality it ſeems ſo neceſſary for its ſubſtance, that it periſheth as ſoon as the paſſage or communication of Air becomes intercepted. The anſwer is at hand; for as we have already ſhewed, the fire of our Hearths, or material fire, is not pure; the combuſtible matter ſet on fire, doth ſend forth abundance of vapours and fuliginous excrements, which do very much prejudice the durableneſs and action of it; therefore it requires ſtill a ſtream of continual Air, to remove the fuliginous matter, becauſe without it the flame ſhould immediately be choaked; ſo that by this appears, how this converſion or imaginary food, is to be taken, and how much difference there is between true and falſe Philoſophy.

Another queſtion may be yet ſtarted, touching the uſe of reſpiration or breathing in Animals: Whether that Air which they draw in their breathing, hath any other end but meerly to refreſh them, as the ordinary Philoſophers do give out, only relying upon their Teachers words, without any induſtrious enquiry touching the truth of it, and contenting themſelves to quote their Authority, as the ſum and ground of all reaſons: But thoſe that look more narrowly into the nature of things, ſay, that there is another much more excellent and neceſſary uſe thereof, *viz.* to attract the Univerſal Spirit, which by the influx of the Heavens, is conveyed into the Air , ere it is endowed with an Idea altogether Celeſtial, Spiritual, and full of vertue and efficacy; it is converted in the heart into Animal ſpirit, where it receives a perfect and vivifying Idea, which renders the Animal capable by its help to exerciſe all the functions of life: For it is this ſpirit contained in the Air we breath in, which ſubtilizeth, and maketh volatile, all the ſuperfluities that are found both in the venal and arterial bloud, the ſhop and matter of vital and animal ſpirits; and it is by the force and efficacy of this Spirit, that Nature is enabled to expel the impurities of nutriment inſinuated in the laſt digeſtions, by entertaining a continual tranſpiration through the pores. This appears even in the Plants, though very obſcurely: for although they be deprived of Lungs, or any other material Inſtrument, for the performance of reſpiration; yet have they ſomething Analogous to it, which is their Magnetiſm, by which they draw that Spirit reſiding in the Air, without which they could not perform their natural Operations, as to nouriſh themſelves, increaſe, produce their like, *&c.* Which manifeſtly doth appear when they are buryed too deep in the ground, and by this means deprived from that vivifying Spirit, by which they are animated, for they immediately die as if they were ſuffocated.

SECT. IV.

Of the Element of Water.

THe moſt learned and perſpicacious Philoſophers amongſt the Ancients, have been of opinion, that Water was the firſt Principle of all things; becauſe it could in their apprehenſion, by its rarefaction or condenſation, produce the other Elements. But as we have heretofore declared this mutual change to be impoſſible, ſo muſt we have our recourſe to another way of Philoſophy. We ſhall not here conſider Water, as being a conſtitutive Principle in the Compoſition of the Mixt; for in this ſenſe we have already ſpoken of it, where we have treated of Phlegm: But we ſhall ſpeak of it as of a vaſt Element, concurring to the frame of this Univerſe, and containing in it ſelf many particular Matrixes, which produce a fair and pleaſing variety of fruits: Firſt of Animals, *viz.* Fiſhes, and all ſorts of Water-Inſects: Secondly, Vegetables, as the herb called *Ducks-meat*, which hath her root implanted in the Water it ſelf: And finally, Minerals, as Shells, Pearls, and Salt, which is abundantly through Creeks and ſecret pores conveyed into the Earth, to advance the production of her own fruits. The Water then is the ſecond general Matrix, where the Univerſal Spirit takes the Idea of Salt, communicated by the Air, which did receive it from the Light, and the Heavens, for the production of all ſublunary things. *Paracelſus* calls the knowledge of this Philoſophy of Water *Hydromancy*.

Sect. V.

Of the Element of Earth.

IN the laſt Section of the foregoing Chapter, we have ſpoken of the Earth, as a Principle partly conſtituting the mixture of the body, and found after its laſt reſolution; but in this Section we treat of it, as of the fourth and laſt Element of this Univerſe.

The Earth in this reſpect is, as it were, the Center of the World, in which all its vertues, proprieties and faculties are united; it ſeemeth even that all the other Elements were created for the uſe and benefit of the Earth, for all what is in them more precious, ſeemeth to be intended for its ſervice. Thus the Orbs of Heaven are inceſſantly whirled about, to ſupply all the parts of it with vital ſpirit, and for the maintaining as it were, and recruiting the daily expences of its Family: The Air is in a perpetual motion, to penetrate her deepeſt bowels, and that to the ſame end, *viz.* to furniſh her with the ſame vital ſpirit; and the Water is never at reſt, running continually to communicate to her that which the Air hath beſtowed upon him: So that all the World ſeemeth to be concerned for the Earth, and the Earth only for her Fruits, which are her Children, ſhe being the Mother of all things. It ſeemeth even that the Univerſal Spirit, loves the Earth above any other of the Elements, ſince it deſcends from the higheſt part of Heaven, where it is in its exaltation, to corporifie it ſelf, or take a bodily ſhape here on Earth. Now the firſt Body which the Univerſal Spirit doth take, is that of *Hermaphroditical Salt*, whereof we have ſpoken above, which contains generally in it ſelf all the Principles of life: it is not deprived of Sulphur nor Mercury, for it is the ſeed of all things, which takes afterwards a body, and the Idea or *taliety* of Mixts, by help of the characters of particular Matrixes or Wombs, incloſed in the body of this great Element: If it meets with a Vitriolick Matrix, it turns it ſelf to Vitriol; if with Sulphur, it becomes Sulphur, and ſo of the reſt, and that by the vertue and efficacy of ſeveral natural fermentations: In a Vegetable Matrix, it becomes

Plant; in a Mineral, Stone, Mineral, Metal; in an Animal, whether living or not living, it produces an Animal, as it is daily ſeen in the generation of ſuch creatures as are produced by the corruption of ſome Animal, or other Mixt; as for Example, Bees degenerated out of young Bull's fleſh, and Worms out of the corruption of ſeveral Fruits: Now as there are a great many differences of Mixts, ſo is there a great variety of particular Matrixes, which often cauſeth a tranſplantation in all things; but this matter belongeth rather to *Chymical Philoſophy* then to this place, where having no time to particularize, we do treat of things only in a general way. The knowledge of that part of Philoſophy which concerns this Element and its fruits, is called *Geomancy*. By it we are made capable of knowing the operations of Nature, both in its very bowels and the ſurface: Her fruits are the Animals, Vegetables and Minerals; and if theſe Mixts are compoſed of the pureſt vital Principles, then according to their proper nature and condition, will they be laſting, and will attain the end of their natural predeſtination (or deſtiny) if ſome external and occaſional cauſe doth not interrupt that progreſs, and ſtop them in their Career: But when *Chance* (or *Fortune*) mixes in their firſt Compoſition or Nouriſhment, any of the Principles of Death or Deſtruction, they cannot long ſubſiſt, neither end their intended courſe by Nature; becauſe theſe Domeſtical Foes do inceſſantly devour and conſume them, as we ſhall make appear, when we come hereafter to ſpeak of *Purity and Impurity*. But before we enter into that matter, ſomething muſt be ſaid of the *Principles of Death or Deſtruction*.

CHAP. V.

Of the Principles of Deſtruction.

SECT. I.

Of the Order of Matters treated in this Chapter.

HAving to treat of *Purity and Impurity*, in the ſecond Book, which ſhall immediately follow this Chapter, and the Principles of Death being in a manner contained under this matter; I found it not out of purpoſe, to cloſe this firſt Book by a ſhort Diſcourſe upon theſe Principles, although to ſpeak properly, they ſhould not be called by this name; for it is proper to the nature of Principles ever to compound or generate, but never to deſtroy.

We have ſhewed heretofore, that Principles may be conſidered three ſeveral wayes, *viz.* Either before the compoſition of the Mixt, or in the ſtate of its compoſition, or finally after diſſolution and deſtruction: We may ſay the ſame here touching the Principles of Death, which we have already ſaid in another place concerning the *Principles of Life*. But becauſe Contraries oppoſed one to the other, are better apprehended and illuſtrated, we ſhall ſay ſomething again concerning the Principles of Life before the compoſition of the Mixt, that we may the better come to the knowledge of the Principles of Death, when we ſhall ſpeak of it in the third Section; for we ſhall refer our ſelves to ſpeak of their effects, being already corporified or embodyed in Mixts, when we come to treat of *Purity and Impurity*.

SECT. II.

Of the Principles of Life before Compoſition.

WE have often ſaid above, that the Univerſal Spirit being indifferent to be made all things, is undermined to any particular ſubject, unleſs by the character of particular Matrixes; and becauſe each Element is filled with theſe particular Matrixes or Wombs, as we have already proved, each Element doth contribute ſomething of his own for perfection of its Compoſite. The Heaven doth by the aſſiſtance of his Stars, communicate unto it her heavenly, ſpiritual, and inviſible vertue, which deſcends firſt into the Air, where it beginneth to aſſume a kind of body; the Air ſends it into the Water or the Earth, where this cœleſtial vertue and influence beginneth to operate more materially, and aſſociate it ſelf to matter, thereby to frame a body to it ſelf, by means of thoſe various natural fermentations which are the cauſe of alteration in ſublunary things: becauſe this Spirit is the true Agent, and the true efficient internal cauſe of theſe fermentations performed in the Matter, which of it ſelf is meerly paſſive, and the *Archeus* or director general of it: For when it is Mixt and united to the body, which clotheth it as it were, or involves it under its rind, it can neither produce nor manifeſt thoſe wonderful effects which it hides and conceals, being then as it were fettered and impriſoned; and ſhall never be able to exerciſe or ſhew his virtues, unleſs it be firſt diſintangled of its corporeity, and groſseneſs of the matter; and this is the main point upon which Chymiſtry beſtows ſo much labour, care and ſtudy, to bring unto light thoſe lovely Truths, which this part of natural knowledge doth contain.

Now as this Univerſal Spirit is the firſt Principle of all things, and that all things are produced by it, and return into the ſame, it is evident, that it muſt by neceſſity prove alſo the firſt Principle or Original of death in all things, which doth imply no contradiction, ſince it is done and underſtood in ſeveral reſpects; for as the variety of Compounds in Nature, doth require for its maintenance a variety of ſubſtances: There is alſo a variety of Matrixes or Wombs in the Elements, to attend the fabrick of thoſe various ſubſtances, and thence it is that what doth oftentimes advance the life of one, is the deſtruction and death of the other; as for Example: A corroſive Principle will be the death of a ſweet Mixt; and contrarywiſe, a ſweet Principle the death of a corroſive, by taking away its acrimony and ſharpneſs, which did conſtitute its eſſence and differency.

But to ſpeak ſtrictly and properly, it appears, that this firſt Principle, thus and thus Ideified, cannot be ſaid to be a Principle of Life or Death: This expreſſion can hold but in a reſpective conſideration, and as it relates to this or that Compound; but as the moſt part of ſweet things do contribute to the ſervice and preſervation of Mankind, becauſe they have ſome correſpondency with his taſte, and participate more of ſubſtances analogous to his Nature and Conſtitution: Hence it comes to paſs, that when the Univerſal Spirit hath received this ſtamp or character, it takes the denomination of *Principle of Life*; as to the contrary that of *Death*, if it be ſtampt with a corroſive Idea, which not only prejudiceth to the actions of man, but corrupts alſo thoſe of ſuch Mixts and Subſtances as ſerve for his daily food and ſubſiſtance.

So when the Air is filled with Arſenical vapours, and Realgarick and Corroſive Influences, which by reaſon of the neceſſary uſe of reſpiration, are often the cauſe of great mortality amongſt Mankind; yet conſidering that thoſe deſtructive ſpirits are not influenced to that end, and that their ill effects, as to Man, are only accidental; ſo can they not properly be called Principles of Death, ſince they are diſpenſed here below by the care of Nature for the generation and propagation of Arſenical Subſtances, Realgars, and other corroſive mixt Compounds, which are no leſs a part of the World then Man it ſelf, and are deſtinated to a better end, by the hand of the all-wiſe Maſter and Creator of this Univerſe, then is known unto moſt of us; for we ſee that Nature and Art can ſo order and prepare theſe Mixts, as to make them fit and ſerviceable for the uſe of Man: We muſt not therefore preſently call Nature a Step-mother to us, ſince God hath endowed us with the skill and means, to avoid theſe evil and malignant influences. To accommodate our ſelves then, to the vulgar way of expreſſion, we ſhall ſay, that the Principles of Life, before the Compoſition of the Mixt, are nothing elſe but the Univerſal Spirit impregnated with the Idea of favourable and amicable Principles to our Nature, and poſſeſſing in the Center of its *Hermaphroditical Salt*, a moderate Sulphur, a temperate Mercury, and a ſweet Salt: as to the contrary, the Principles of Death are nothing elſe but this ſame Spirit, having in it the ſame *Hermaphroditical Salt* mixt with a ſharp Sulphur, a biting Mercury, and a corroſive Salt, as we ſhall more fully declare in the following Section.

SECT. III.

Of the Principles of Death.

I Muſt, before I do proceed further, repeat once more here, that when we call theſe, *Principles againſt Nature*, we underſtand not Nature in a general term; but only humane Nature: becauſe it happens often, that what is Poyſon to one *ſpecies*, ſhall be nouriſhment to the other: ſo doth Hen-bane pleaſe to Sterns, which feed upon it; and killeth Man.

This ground being laid, I ſay, that all heat, or rather all hot, corroſive, biting, ſharp ſubſtance, which deſtroys and conſumes, is ſuch, becauſe it contains in it ſelf a Sulphur againſt Nature; and that from this Sulphur it is, that as from their Spring, do flow all the vertues and proprieties of the Mixt, where that impure Sulphur is predominant: for if Life doth flow from a ſweet, natural and vital Sulphur, and that it receives a long preſervation by the eſſential proprieties of this Sulphur, it muſt neceſſarily be concluded, that death and deſtruction muſt follow that Sulphur which is of an oppoſite nature unto it; and all Arſeniks, Realgar, Auripigment, or Lead-oar, Sandarack, and all other venoms of a hot, fiery nature, whether *celeſtial*, *aerial*, *watery*, *terreſtrial*, all theſe Poyſons, I ſay, are ſuch by their very actions, and ſole propriety of this Sulphur againſt Nature.

It is not our deſign to ſpeak here of thoſe Principles which are enemies and contrary to humane nature when they are already incorporated, and do compoſe ſome of the venemous Mixts, becauſe we refer our ſelves to treat of it in the Book following; we ſhall only ſpeak of theſe Principles here, as they are yet *ſpiritual*, and flowing from the Stars; by the mediation of the Univerſal Spirit, and as this Principle is ſingle in this reſpect, ſo hath it received theſe ſeveral and different denominations: for as we have already ſaid, that the Sulphur, which is heat, cannot be without Mercury, that is to ſay, *moiſture*; neither without Salt, by reaſon of their mutual union, it followeth from thence, that a biting Mercury, and corroſive and cauſtick Salt is required to the ſubſiſtance of a ſharp Sulphur; as likewiſe a temperate Mercury and ſweet Salt is required for the preſervation of a moderate Sulphur. For theſe three Principles are ever united and joyned very ſtrictly together, whether conſidered as Principles of *life*, or Principles of *death*; and if ſometimes we treat of them ſeparately, it is to the end only that their operations and nature may be better underſtood; becauſe there is ſtill one of theſe Principles predominant above the others in the Compound, and whoſe actions are made manifeſt, concealing and blunting the efficacy and vertues of the two other, though notwithſtanding they act by way of Concomitancy, with that which predominates; as for Example: When the Mercury of Death operates the Sulphur againſt Nature, and corroſive Salt does not ceaſe from their action, though it appears but little, by reaſon of the predominant Principle, for *à potiori ſumitur denominatio*.

Now as the Sulphur of Death, or Mortal Sulphur, doth manifeſt it ſelf in the Arſenical ſubſtances, *Realgar*, *Auripigment*, &c. the Mercury of Death doth alſo the ſame in all *Narcoticks*, and we have not without reaſon affirmed theſe poyſons to be, not only *terreſtrial*, but *aerial* alſo; for in all the Element there is much of this malignant Mercury, not yet ſpecified in any individual Body, but flying up and down, and remaining of a volatile nature; and whenſoever it exceeds proportion, doth cauſe an infinite number of Epidemical, Peſtilential, and Contagious Diſeaſes; and if the individual venoms already immerſed in Bodies did not attract it for their nouriſhment, it would infallibly, cauſe a great ſpoil and diſorder in the World.

And as Salt is the Principle which cauſes the coaleſcency of ſubſtances in Bodies, or corporification (if we may uſe the word) and that by it Sulphur and Mercury are made viſible and palpable, by reaſon of the coalition of the ſame which it cauſes; ſo the corroding Salt, doth alſo corporifie the two other Principles of Death, and renders them viſible by giving them a Body; for theſe ſubſtances otherwiſe ſhould remain inviſible in the Univerſal Spirit, were they not brought to light, and made corporeal by the operation and help of the Salt, and by this means it is, we find true, that ſo important Axiom of the great *Triſmegiſt*, when he ſaith, that *Quod eſt occultum fit manifeſtum, & vice verſa.* The violence and hurtful nature of this Salt of Death, appears very little in natural things; but when Art hath beſtowed its skill, upon one or ſeveral Mixts, then appears its activity, and not before, as is obvious in all ſublimated Corroſives, *Aqua Fortis*, Butter of Antimony, and ſeveral other Preparations, of this nature, known to the Sons of Art, it is from ſuch a kind of Salt, that Cancers, Gangrenes, Kings-evil, and all other corroding Ulcers are generated in mans body; which is againſt the ſenſe of thoſe, who do impute to ſharp and biting humours, the cauſe of theſe Diſeaſes, having but Chymical notions of knowledge in natural things, as we ſhall ſhew in the next Book, where we ſhall declare which way the Principles of Death do incorporate themſelves in Man.

THE

The Second Book
OF
The Firſt Part.
Of Purity and Impurity.

Chap. I.
What is Purity and Impurity.

THE words *pure* and *impure*, may be taken ſeveral ways; for ſome by *Purity* underſtand what is uſeful and profitable to Mans Nature, and by *Impurity* what is hurtful and damageable to it: Others will have that to be *purity* which is *homogeneous*, and all *heterogeneous* ſubſtances to be *impurity*; but it may ſo happen ſometimes, that Heterogeneous ſubſtances ſhall be profitable, and the Homogeneous hurtful. Thence it may be gathered, that nothing can be ſaid either *pure* or *impure*, abſolutely ſpeaking, but only comparatively, and in reſpect of one thing to another: For as we have already ſaid above, it may happen, that what ſhall offend the one, ſhall help the other; as for Example: Should it not be thought a very great abſurdity to believe, that the bones of Animals ſhould be impure, becauſe men do not eat them, and that their Fleſh only ſhould deſerve the appellation of *pure*, becauſe men feed upon it with pleaſure, though the ſame bones be ſo abſolutely neceſſary to the perfection of Animals, that without them they ſhould not be what they are, ſince Bones are the ſolideſt part of their ſubſtance.

We ſhall not take here *purity* and *impurity* in this ſenſe: but by *purity* we will underſtand, all what in the Mixt or Compound can be found to ſerve our end and purpoſe; as to the contrary, by *impurity* all what oppoſeth it ſelf and contradicts to our intention in the work: For though in Mixt Bodies there be many parts hurtful to mans nature, yet if we ſpeak abſolutely or reſpectively, in reference to the ſame Mixt, the parts of its Compound cannot be ſaid *impure*, ſince they are of the eſſence of it, and do conſtitute his integrality: Moreover theſe parts cannot be damageable to man, but conditionally, ſince nothing compels him, but his own will to make uſe of it.

Purity and *Impurity* are in this ſenſe conſidered, either in man, or out of him. The *impurity* found in man doth hinder and diſturb his and Natures intention, which is, that without interruption, he might enjoy a full and entire health: The ſame doth it alſo out of him, ſince we ſuppoſe that it muſt neceſſarily enter and penetrate in him: But this is the difference between theſe two kind of Impurities; that *inward-impurity* doth all immediately by its preſence, and the other is only conſidered as remote and abſent, though it is to be nearer at hand, at ſome time or other. Becauſe, as there is a neceſſity for man to breathe, and receive daily food, ſo can he not avoid the action of that *impurity* wherewith the Air and Elements are ſometimes impregnated, as hereafter we will make it appear, and demonſtrate alſo that in thoſe ſubſtances which by ſome are accounted *pure*, there doth yet remain intermixed abundance of impurity.

CHAP. II.

How Purity *and* Impurity *are mixt in all the Compounds of Nature.*

THere is in every Mixt a Salt, Sulphur, and Mercury, proper to its nature, as we have already ſaid above: Now all Mixts perfectly framed, is either Animal, Vegetable or Mineral. Whence we gather, that as the one is the food of the other, as it appears by the mutation of Minerals into Vegetables, and of Vegetables into Animals, and again from Animals into Vegetables and Minerals; ſo is there in every Mixt, a Salt Sulphur and Mercury, Animal, Vegetable, and Mineral, imparted to them by the Univerſal Spirit; for all what receives nutriment receiveth it by its like, and what is diſſimilary, is expelled as an Excrement: and if the expelling faculty is not vigorous and ſtrong enough for this purpoſe, there remains many Excrements in the Compounds, which occaſions many Mineral Diſeaſes in mans body, altogether unknown to vulgar Phyſick, and conſequently out of the reach of her Methodical Remedies and Preſcriptions.

This which I ſay here, cometh to paſs in this manner: When the food is received into mans body, and digeſtion hath ſeparated the ſeveral parts of Mixts, which contribute to its nouriſhment; each part doth attract out of this food, and the Animal Principles therein, that which is moſt proper and Analogous to its nature. But as for thoſe other Principles, which cannot be aſſimilated to our ſubſtance, and are no ſtaff of our lives, Nature doth expel them by the miniſtery of that faculty which is dedicated to ſuch an Office: But if this faculty be oppreſſed or debilitated, by ſome accidental and external cauſe, or by ſome internal diſorder of our *Archeus*, which is the guide and director of our life and health; then do theſe Excrements coagulate themſelves, or turn volatile, according to the Idea which the natural fermentation vitiated by this accidental diſorder, imprints on them; and by this defect are all the Mines of Diſeaſes bred and generated in us. Whence it cometh to paſs, that ſuch Diſeaſes cannot be maſtered nor expelled, but only by ſuch as are firſt very well acquainted with the nature and vice of the Ferment; and ſecondly, with the proper ſpecifical remedy, which can reſtore our Nature, and appeaſe thoſe irritations of Spirits, which are cauſed for the moſt part by a prepoſterous or corrupt fermentation. For if the ferment be of a *coagulative* nature, it is neceſſary we be acquainted with ſome ſpecifick diſſolvement, which ſhould not prejudice the Ventricle: but if it be ſuch a diſſolvement, as will make an evil colliquation of the nutriment and parts; he that will undertake the Cure with ſucceſs, muſt know what remedy is capable to repair that fault in Nature, and reform its diſorder. Thence proceed the reiterated fits in Feavours, and their continuance often, notwithſtanding the adminiſtration of many remedies, which cannot ſtop their raging fury, becauſe we are for the moſt part ignorant in the effects of good or bad fermentation.

If our leaſure would give us leave to enlarge here upon ſeveral noble and curious inquiries, we ſhould be taught by this Philoſophy the cauſes of ſeveral effects, altogether unknown to moſt men. I will give a touch only by the by, for a proof of it, upon this Queſtion ordinarily moved: *Wherefore Men before the Flood were much ſtronger and long-lived without compariſon, then after that general inundation of the World?* Two reaſons of this effect and wonderful change we can give, according to the Doctrine laid already before: The firſt, that as the world ſtood then in the beginning, there was yet no change or alteration in the nature of things; which happened ſince, only by the ſeveral mixtures and changes introduced in the Compounds of Nature, after the deſerved Curſe inflicted upon ſin. The ſecond, that the Waters, which are the general Matrixes or Wombs of ſeveral Minerals, and particularly of Salts, had not yet covered all the Earth, neither by conſequence communicated the Mineral ſeeds, to feed the Family of Vegetables, whoſe vertue is thereby become vitiated, and their firſt nature in a manner altered: Whence the Animals Family hath been made partaker of this defect, becauſe it draws its food and ſuſtenance almoſt from Vegetables; as this chiefly appears in the Vine, which abounds in Tartar, which is its proper Salt: Now, that Tartar is a kind of Mineral, appears by its action, working potently upon Minerals, and with great efficacy upon Metals; for, *all natural action is performed by its like*, and there is a proportion required between the Agent and Patient. But to avoid here multiplying objections, I underſtand here by this Proportion only a generical ſimilitude.

Theſe things thus premiſed, 'twill not be very difficult to conceive what is here properly underſtood by *impurity*, *viz.* That they are Principles of an Heterogeneous and different nature, mixt with other Principles, not of the ſame *Family* nor *Category*: As when Minerals become by ſome way or other, united to Vegetables or Animals: It is alſo very eaſie to obſerve, how *Purity* inſinuates it ſelf in all things, by taking the oppoſite or contre-part of what we have ſaid of *Impurity*. But now will it be neceſſary to ſhew, how *impurity* may be ſevered or baniſhed, ſince it is a Principle of Death and Deſtruction, as *purity* a Principle of Life, as we have ſaid here above.

Chap. III.

How the Impurity of all things is to be ſeparated.

WEE have ſaid *impurity* to be that which could interrupt the perfection of thoſe actions, which do conduct the Mixt to the end of its natural predeſtination: It is then very requiſite to know, how it may be freed from this domeſtick enemy, which inſenſibly doth creep into the Compounds. Now as all Mixts are under ſeveral genders, and differing *ſpecies*, and that there is ſeveral ſorts of *impurities*, men have invented ſeveral Arts to correct and take them away: and as the Art of Chymiſtry hath all the things of Nature in general for her object, ſo doth it endeavour to ſhew how they may be freed and extricated from their *impurities*: But becauſe, to particularize all the parts of this doctrine, would extend beyond the limits of a Compendious Treatiſe, as this we do intend; we ſhall content our ſelves to ſpeak only of thoſe Impurities, which uſe to happen in Chymical Operations: For, to handle any part of Phyſical Chymiſtry or *Iatrochimy*, is not here our deſign, ſince it could alone fill many Volumes. You are to note only by the by, that there is two ſeveral ways of removing the *impurity* of things; the firſt *univerſal*, the other *particular*: The firſt is an univerſal medicine, which is or may be extracted from ſeveral ſubjects, after they have been, as much as Art can perform it, reduced to their Univerſality, and deveſted of their ſpecification and natural fermentation, which cauſed them to be this or that determinate Mixt: For this Medicine being by a fit digeſtion, and requiſite coction and maturation reduced to the higheſt degree of its exaltation; it is ſufficient to expel *impurity* out of all Bodies indifferently, becauſe it inſenſibly conſumes it, both by the help of Fixation and Volatilization. The ſecond is a particular Medicine, which by its ſpecifical vertue and faculty, may expel particular *impurities*: A thing of no ſmall importance, and whoſe ſecret is not to be attained unto but by the true Sons of Art; and thoſe which do joyn together manual Operation and diligent Practice to an indefatigable ſtudy, which do uſe and bring to the *Examen* of Tracts the weight of their reaſon, and never venture their Remedies upon ſick Patients, unleſs grounded upon the infallible Theorems of the nobleſt Philoſophy, and the trueſt Phyſick.

To return then to our Operations, we have ſaid above, that by the miniſtery of fire, the Artiſt did ſeparate from each Compound, five Subſtances or differing Principles, which though very *pure* in themſelves, yet in ſeveral reſpects may have their *impurities*, either in reſpect to themſelves, or in reſpect to our intention: For if we have occaſion to uſe only the Spirit extracted out of a Mixt, and that this Spirit be joyned with ſome portion of the Phlegm of it, we ſhall ſay this Spirit to be *impure* in ſuch a reſpect, and ſo of the other Principles. Now concerning the particular way of ſeparating theſe kind of *impurities*, we ſhall treat of it in the following Book, but particularly in the firſt Chapter of the laſt Book, to which we refer the Reader.

CHAP. IV.

Of the Pure Subſtances extracted out of Mixts.

BEſides the five Subſtances or Principles, which we have formerly ſaid may be extracted out of natural Compounds, by the miniſtery of fire; there may be yet ſome Eſſences drawn, by diverſifying the Operations of Art, which exalts, and do ennoble the Principles of theſe Mixts, and raiſe it to their *purity*. Theſe Eſſences do not only differ in body, from that of the Compound whence they were extracted, but are advanced alſo to nobler and more efficacious qualities and vertues, than thoſe which during it's intireneſs did adorn their bodies, and after its diſſolution and artificial ſeparation, will poſſeſs more then any of the Principles of the Compound. But though theſe wonderful Eſſences obtain ſeveral names in the Books of Philoſophers, who call them *Arcana's*, *Magiſteries*, *Elixirs*, *Tinctures*, *Panacea's*, *Specifical Extracts*, &c. they are comprehended nevertheleſs, under the general notion of *pure* and *purity*; and it proceeds from hence, that after thoſe Eſſences are drawn out of their Mixts, the remainder is commonly rejected as *impure*. *Paracelſus* in his firſt Book of *Archidoxa's*, ſaith, that the ſix following Preparations, *viz*. *Eſſences*, *Arcana's*, *Elixirs*, *Specificks*, *Tinctures*, *Extracts*, are contained in the myſtery of Nature, which he calls *Purity*, and that with a learned alluſion to the *Greek* word πῦρ, which ſignifies *fire*; thereby inſinuating, that theſe Eſſences are brought near and aſſimilated to their firſt Principle, which is of the nature of Fire, ſince Light it ſelf, which is but Fire, is the firſt Principle of all things: In the ſame place, he calleth alſo the Body *Impurity*, which keepeth in

Priſon this myſtery: and therefore ſaith, that he that will enjoy this myſtery, muſt deveſt it of all Corporeity, as it ſhall appear in the ſecond part of this Treatiſe. But it is here to be noted, that when *Paracelſus* ſaith, that this myſtery muſt be deveſted of its body, he means only that it muſt be freed of that groſs body wherein it is impriſoned, to impart him a more ſubtle one, which he may ſhake off with eaſe, and ſpiritualize himſelf, to be the more capable thereby to penetrate into our laſt digeſtions, and there correct all thoſe defects which *impurity* might have cauſed. This myſtery ſometimes is extracted out of one ſole Mixt, as *Magiſteries* are done; ſometimes of ſeveral Compounds, as *Elixirs*, which will appear more plainly hereunder.

But it will not be from our purpoſe, to treat ſuccinctly of Compounds, either perfect or imperfect, and their variety, becauſe we have already much ſpoken of it in this Treatiſe, and are to ſpeak yet more; conſidering likewiſe that theſe Mixts are the ſubject and matter of Chymical Operations, and further, that it may ſerve as a common and peculiar place of Phyſick, where he that will rightly be informed, to what *Category* each Body doth belong, may have his recourſe: We ſhall then handle in this laſt Chapter of this Book, *the natural generation and corruption of Bodies, and their variety.*

CHAP. V.

Of the Natural Generation and Corruption of Mixts, and their variety.

SECT. I.

Of the Order of this Chapter.

Before we can well underſtand the nature of Mixts and Mixtion, and apprehend clearly how *purity* or *impurity* bear a part in their generation, we muſt know well before-hand, what Alteration is; and thence conſequently inform our ſelves touching the nature of Generation and Corruption. Therefore it will be appoſite, to ſay ſuccinctly ſomething of Alteration, Generation, Corruption, and Mixtion, before we enumerate more particularly the Mixts, either perfect or imperfect, which are the fruits of Nature, and by conſequence the ſubject of its Operations.

SECT.

SECT. II.

Of the Alteration, Generation and Corruption of Natural things.

IF you will inſiſt upon the Etymology of the word *Alteration,* you ſhall find it to be nothing elſe but, *A motion by which any ſubject is made different from what it was before* : Or thus, It is a motion by which a ſubject is accidentarily altered according to its qualities. In this, Alteration differs from Generation ; for Generation is an eſſential and ſubſtantial change, and Alteration is only an accidental motion of the qualities of a Body : And further, Alteration is only a diſpoſition and preparatory way towards Generation and Corruption : and thence it comes to paſs, that there are two kinds of Alteration ; the one perfecting the Body or Subſtance, the other deſtructive of it. In perfective Alteration, all the qualities obſerve a juſt temper of proportion, and an equal harmony, according to the nature of their ſubject, and in order either to preſerve the ſame nature, or aſſume a more perfect one. But in the deſtructive or putrefactive Alteration, all qualities fall into that diſorder, that they plainly remove their ſubject from its natural conſtitution, as it often happens in fluid bodies, abounding with great ſtore of Phlegm ; and is ſeen by Example in Wine, when it begins to corrupt, and grow flat.

This is then the difference between Alteration and Generation, that Alteration introduceth no ſubſtantial form into its ſubject ; but that which is ſubſtance in the ſubject, receives only ſome adventitious quality which it had not before ; as for Example, when *heat* or *cold* are generated in any Plant or Animal. But Generation is a change of ſubſtance, which preſuppoſes not only the production of new qualities in the Subject, but of new ſubſtantial forms alſo : as when out of Bread Bloud is engendred, the ſubject or matter of this Bread is not only deprived of the quality of Bread, but alſo of its ſubſtantial and eſſential form, to take the form and quality of Bloud : Yet are you to note, that a queſtion upon this may be raiſed, though not wanting its Anſwer, *viz.* That when ſome Phyſical Herb is preſcribed to a Nurſe to feed upon, that the vertue of this Herb may paſs into her Milk, whether it be the ſame numerical quality which was in the Herb, that is now found in the Milk ? The Anſwer is negative ; though it be the ſame ſpecifical, or rather generical : For as the Milk and the Plant do generically differ, the difference of their quality ſhould alſo be altogether generical. But to ſpeak of theſe things more intelligibly, we ſay with *Van Helmont*, that the vertue of the Plant was incloſed in its Median or Intrinſecal Life, which is neither altered nor corrupted by the Nurſes digeſtions, and ſo is conveyed into her milk, ſetting aſide the ordinary Quiblets and Niceties of Schools, which uſually raiſe more doubts, then they can eſtabliſh truths in Phyſick and Philoſophy. Hence you may learn, how the Generation of one thing is the Corruption of the other: and contrary-wiſe, the Corruption maketh the Generation. Therefore we will ſay no more of Corruption, becauſe whoſoever ſhall underſtand the one, cannot be ignorant in the other: We will only ſuccinctly ſhew, wherein Generation and Corruption, do differ from Creation, Deſtruction or Annihilation. The difference then lies in this, that Generation and Corruption do preſuppoſe a matter, which muſt be the ſubject of the ſeveral forms introduced into it. But Creation and Deſtruction require no matter; for as the one is the production of ſomething out of nothing, ſo is reciprocally Annihilating performed but upon created things. Generation and Corruption are natural motions, proceeding from a ſecond and finite cauſe: but Creation and Deſtruction or Annihilation, can only be the work of an Omnipotent hand, and infinite Cauſe; the diſtance between being and not being, ſomething and nothing, being infinite.

Theſe things thus cleared, we come to Mixtion, which is two-fold, *viz.* the one ſo called improperly, which is artificial; the other proper and natural. That improperly called, is but a local approximation of Bodies differing in Nature, confuſedly joyned together, ſo an heap of Corn is improperly called Mixt; this Artificial mixture, in which the parts are really mixt together, but without change or alteration of the whole ſubſtance, is yet double, *viz.* that which is made by *appoſition*, and that which is by *confuſion* of the parts: Appoſition is made, when the things mixt together, are divided in parcels ſcarce perceptible to the eye, as when the particles of Wheat and Barley mixt in a heap, are mingled in the ſame maſs of Flower: Confuſioſn is, when the mixt parcels are not only imperceptibly divided, but alſo ſo confounded together, that they cannot eaſily be ſeparated again, as when Water and Wine are mixed together, and Apothecaryes mix their Druggs, which remain ſo confounded, that none can be longer diſcerned.

Natural mixture properly ſo ſaid, is a ſtrict union of the ſubſtances, whence ſome things ſubſtantial doth reſult, and yet different from the other Subſtances which conſtitute it, by the help of Alteration: For by the conjunction of the Principles, a Mixt is generated, whoſe principal form differs from that of its own Principles, as it is made more manifeſt in the diſſolution of the Mixt, according to the *Peripatetical* Axiom, which ſaith that, *Quod eſt ultimum in reſolutione, id fuit primum in compoſitione.* This Alteration, which cauſeth Unition to lead Nature to Union, and thence to Mixtion, hath been already illuſtrated, where we have ſpoken of the conjunction of Salt and Spirit, and the action of Phlegm and Sulphur, which overcome the ſharpneſs and ſowerneſs of Salt and Mercury; and when we have ſaid, that the Earth imparts ſolidity and body to theſe ſeveral Subſtances; it is by the means of this Alteration, this union and conjunction, that the natural Compound is framed and produced. And if it be objected, that theſe Principles are rather a work of Art then Nature, your recourſe ſhall be for anſwer, to what we have already ſaid in the firſt Section of the firſt Chapter of the firſt Book.

SECT. III.

Of the differency of Mixts in general.

HAving ſufficiently diſcourſed at large of thoſe ſingle, pure and homogeneous Subſtances, which we have called Principles; and having illuſtrated their various alterations before their union and mixtion, which maketh up the perfecting of the Compound: it followeth we ſhould ſpeak of ſuch Mixts as are reſulting from this action. All Mixts are perfectly or imperfectly compounded, according to the ſtrength or weakneſs of their Principles union. The Body, which is imperfectly compounded, hath only a light coagulation of ſome of the Principles, and not very laſting, neither differenced by ſome principal, ſubſtantial form, which ſhould make it eſſentially to differ from its Principles; as for Example, Ice or Snow, which only differ from Water by adjunction of ſome foreign and adventitious qualities: But the perfect Mixt is that, which is endowed with a ſubſtantial principal form, diſtinguiſhed from the Principles whereof it is compounded, after their perfect union, and for this reaſon alſo is more laſting; ſuch are all Minerals, Vegetables, and Animals.

Thoſe Bodies which are imperfectly compounded, are called *Meteors*, and their difference is great, according to the difference and variety of the Principles which abound in them; for ſome are Sulphureous,

reous, others Nitrous, others Aqueous, and ſo of the reſt; of theſe we muſt ſay ſomething, before we ſpeak further of perfectly compounded Mixts: and herein will we imitate the proceſs of Nature in her workmanſhip, which never produceth any perfect Mixt, before her Principles have paſſed through Meteorick Nature, as we ſhall explain hereafter: her method being, never to paſs from one extremity to the other without a mean. Meteors are called (ſometimes) perfectly mixt Bodies, not becauſe the nature and form of Mixts is in them, but becauſe, although they preſerve in a manner the nature of Principles, yet they differ in ſome kind from the natural ſtate of thoſe Principles; which is the reaſon they are aſſigned a middle condition and nature, between that of pure and unmixt Principles, and Bodies perfectly compounded of them: they are alſo imperfect Mixts, by reaſon of their ſudden generation, and diſſolution: For as the mixture and coagulation of the Principles in thoſe Bodies is imperfect, ſo can they neither be of duration; but are eaſily converted into the nature of the Principle moſt predominant in them. The material, remote cauſe of theſe imperfect Mixts or Meteors, are the Principles; and the *proxime* or immediate, thoſe fumes and Spirits, into which by the vertue of ſome efficient cauſe, the ſame Principles are turned by volatilization and ſpiritualization. But you are to note here, that there is two different kinds of Fumes and Spirits, *viz.* Vapours and Exhalations: Vapour is a hot and moiſt Fume, and conſequently proceeding from Phlegm, if it prove Aqueous; from Oil or Sulphur, if inflamable; or Mercury, if windy and ſpirituous. Exhalation is a hot and dry Fume, and by conſequence generated from a terreſtrious and earthly Body, and a Principle of Salt: It muſt alſo be noted, that the Vapour is ſaid to be hot and moiſt, becauſe Water converted into Vapour, is elevated by the action of Fire which is inſinuated in it, and for this cauſe (by a *Greek* expreſſion μετέωρος) is called Meteor, or a body imperfectly compoſed of ſome Principles. And concerning the Doctrine of Meteors in particular, they that will be exactly informed, muſt repair to ſuch Authors as have profeſſedly handled this Doctrine: For it would engage us beyond the bounds which we have limited to this our ſhort Chymical Abbreviate in our Preface, if we ſhould undertake that matter here at large.

Sect. IV.

Of the Diverſity of Perfect Mixts.

HAving ſhewed, that Nature ever aims at the corporifying and ſpiritualizing Mixts and their Principles, by the aſſiſtance of the Univerſal Spirit, and the vertue and character of particular Matrixes or Wombs, and that wrought by the operation of the Ferment, and impreſſion of the Idea once received: We muſt alſo now turn our diſcourſe to thoſe Mixts, which are as we have already often ſaid, generated by the Univerſal Spirit only, cloathed under ſome Meteorical Idea; as that appears in the reſolution of Metals and other Minerals, which are converted into Fumes and Exhalations, before they eſcape our ſight, to re-unite themſelves to the Univerſal Spirit; whence we gather, that they muſt have obſerved the ſame degrees of production, in their generation, corporification and coagulation.

The perfectly compounded Body, is animated or inanimated; the animated Mixt, is that which is adorned with a ſoul, or vivifying form, as Plants, Beaſts, and Men; as contrarywiſe, the inanimate Mixt is that which is deprived of all appearance of life, which doth conſiſt in ſenſe and motion.

But a Queſtion is here raiſed, *Whether Minerals are animated or no?* To which, without mentioning here the vulgar School-Arguments, to avoid tediouſneſs, we anſwer, That though in theſe Bodies, which are fruits of the Earths Center, we cannot ſo eaſily perceive thoſe manifeſt vital Operations, which are obvious in Plants and Animals, yet nevertheleſs are they not altogether deprived thereof; ſince they are multiplyed by a conſtant perpetuity; which moves us to ſay, that as they have a multiplicative form of their own *ſpecies*, ſo muſt they be endowed with life. Some of the ancient Philoſophers have acknowledged this Life, as when *Pliny* ſaith, *lib. 3. c. 10. Spuman Nitri fieri, cum ros cecidiſſet, prægnantibus intrariis, ſed non parientibus.* Let us then conclude, that Minerals do live, as long as they are joyned to their Matrix and Root, ſince they grow there ſenſibly; but when they are ſeparated from it, they are juſtly called *Inanimate Mixts*; as we may rightly call *dead*, the ſtock or body of a Tree ſeparated from its root. In this ſenſe we ſhall from henceforth term them, as alſo many other ſubſtances, though taken from Animate Bodies: In this manner, we ſay, there are two kinds of Inanimate Bodies, the one extracted from the

Earth, the other from the Mixts themſelves, either animate or inanimate: thoſe which are extracted from the bowels of the Earth, are called Minerals, whereof there are three *ſpecies*, *viz.* Metals, Stones, and middle Minerals, which are alſo called *Marcaſſites.*

Metal is a Mixt, extending it ſelf under the Hammer, and melting in the fire. *Marcaſſites* are fuſible, but extend not under the Hammer: and Stones are neither fuſible nor extenſible.

As for thoſe Mixts which are not digged out of the Earth, humane Art hath found a way to draw them ordinarily out of animated bodies, ſuch are Fruits, Seeds, Roots, Gums, Roſins, Wool, Cotton, Oil, Wine, and ſeveral other ſubſtances extracted and ſeparated as parts of Animals and Vegetables, no more conſidered as Organical; whoſe Animals are alſo made uſe of (in Chymical Operations) when they are deprived of their life and ſoul. Of all theſe mixt ſubſtances, as much animated as inanimated, ſhall we treat in the following Sections.

SECT. V.

Of middle Minerals or Marcaſſites.

Middle Minerals are *Foſſiles* of a middle nature, between Metals and Stones; and partaking in ſomething of the eſſence of both: For by their fuſion they agree with Metals; and with Stones, in their brickle and crumbling nature. Middle Minerals are for the moſt part Metallick Juices, diſſolved or condenſed, or elſe Metallick and mineral Earths.

The principal *Metallick Juices* are, Firſt, *Salt*, which is a body eaſily crumbled, diſſolving it ſelf in moiſture and coagulating in drought: whence it is evident, that the predominant and abounding Principle in this Mixt is Salt, whence it borrows its denomination, and becauſe it is a Mixt, thence it follows, that it is not deſtituted of other Principles, as it appears by the action of fire upon it, and its Spagirical Anatomy.

Salts are either natural or artificial: Nature produceth the firſt kind, which are called *Foſſile Salts*; Art doth make the other, of which therefore ſeveral *ſpecies* are found; as for Example, *Salgem.* Armoniack, Saltpeter or Nitre, Well or Pit-ſalt, Sea-ſalt, Fountain-ſalt, Aloms, Vitriol or Copporas, which all are endowed with ſpecifical qualities differing the one from the other, according to the nature of their predominant Principles, which are either fixt or vola-

tile,

tile, diſſolving or coagulating, as may be ſeen by the diverſity of Operations which may be performed upon each kind of theſe Salts.

Bituminous Subſtances follow Salts, and comprehend ſeveral various kinds, as *Aſphaltum*, Amber yellow or *gris*, Camphire, *Naptha*, Petroly, and Brimſtone, which we difference from the Sulphur as it is a Principle in all things: For this is but a fat and ſtinking Mineral Juice, having in it ſelf a ſubtile, inflamable part, and another terreſtrious and Vitriolick, by which he ſoon deſtroys Metals, and will ſoon be extinguiſhed if Vitriol doth abound in it. This Brimſtone is either quick (*Sulphur vivum* in the Shops) that is, ſuch as when it is drawn out of the Earth, and never felt the fire; or prepared by Art, and refined by Fire, as we have it in Cakes from the Druggiſt. Several various Remedies uſeful in Phyſick, are by the help of Art extracted out of theſe Bituminous bodies; as we will more particularly declare in the laſt Book of the Second part of this Chymical Treatiſe.

Arſenick is either Natural or Artificial; the natural is of three kinds, *Auripigment* or *Litharge* of Gold, ſo called for its golden colour; *Sandarack*, which is red; and *Realgar*, which is yellow: the artificial is prepared by a ſublimation of the natural, with Salt.

Antimony is alſo natural, otherwiſe called Mineral; and artificial, which is moſt frequent in our uſe, having been melted from the Mineral in Cakes: Of the qualities and choice of it, its conſtituting parts, and various kinds, we ſhall ſpeak more fully hereafter, where we handle the practice upon this Mineral.

Cinnabar is a Mineral body, compoſed of Sulphur and Mercury, or Brimſtone and Quick-ſilver, coagulated together to a ſtony hardneſs. The natural is extracted from Mines, where it is found more or leſs mixed with Sand; the artificial is made by ſublimation of thoſe two ſubſtances mixt together.

Cadmy is natural or artificial; the natural is a Metallick Stone, containing in it ſelf the volatile and impure Salt of ſome Metal; there are very many kinds differing one from the other, in colour, vertue, and conſiſtency: The artificial is found in Furnaces where Metals uſe to be melted, being nothing elſe but the *Flores* or volatile Salt of Metals, ſublimated and cleaving to the walls of the Furnace; raiſing, as the ſubtileſt part of flower doth in Mills, to the roofs of melting houſes. There are alſo of this ſeveral ſorts, as, *Pompholyx*, *Spodium*, *Tuty*.

The other kind of *Marcaſſites* are *Mineral Earths*, as *Bolus's*, *Terra Sigillata* of *Lemnos*, *Sileſian Clay* or *Blois* in *France*, Chalk, red

Clay, and all other Mineral Earths. To this we might alſo add, all Artificial Earths, as the ſeveral kinds of Lime, made out of ſeveral ſorts of Stones, and containing in them a corroding Salt, and a ſecret fire.

But before we begin with the Section of *Metals*, we muſt remove a difficulty which offers it ſelf in this place; and that is, That ſince Salts are reckoned amongſt Metallick Juices, how can Armoniack Salt, and ſome kind of the Metallick Earths, of which we have ſpoken above, be placed amongſt *Marcaſſites*, ſince *Marcaſſites* or middle Minerals, do not indeed yield or extend themſelves under the Hammer, but are fuſible; for it is granted that Armoniack doth never melt in the fire, but rather aſcends and ſublimates it ſelf; and ſo likewiſe thoſe Metallick Earths do not melt, but eaſily calcine and ſublimate themſelves in Metallick Flowers. To this we anſwer, that if indeed Armoniack Salt be put alone in a Crucible, it will not melt, but ſublimate; But if this Salt neverthleſs be mixt with other Salt in fuſion, it will melt together; as likewiſe if Metallick Earths be mixt together alone, they ſhall rather be calcined then melt; but if they be allayed with ſome fuſible body, then are they capable of fuſion: as by Example, When to equal weight of red Copper, is added as much *Lapis Calaminaris*, it will melt with the Metal, turn it into a yellow Braſs, and make an augmentation of fifty in the hundred. It is then to be noted, that when *Foſſiles* are divided into Metals, Stones, *Marcaſſites*; by *Marcaſſites* or middle Minerals muſt only be underſtood thoſe bodies which participate, or bear ſome relation with the nature of Stones or Metals, either in reſpect of their fuſibility, or extenſiveneſs, or hardneſs, or ſoftneſs. So that noble Mixt which ſeemeth to be the Maſter-piece of Art, that is Glaſs, muſt in this ſenſe be reckoned amongſt *Marcaſſites*, ſince it eaſily melts, but cannot for all that yield and extend it ſelf under the Hammer, if you except that which was made Malleable at *Rome* (in the time of *Tiberius*) whereof the Secret is periſht with its Author.

SECT. VI.

Of Metals.

METals are hard bodies, generated in particular Matrixes or Wombs in the bowels of the Earth, which may be extended under the Hammer, and melt in the Fire. They are commonly reckoned ſeven in number, which number is referred to the ſeven Planets, whoſe names (in the writings of Chymical Philoſophers) they ſometimes do borrow. They are divided into perfect and imperfect: Perfect, ſay they, are thoſe which nature hath advanced and brought to their ultimate and perfect end. The tokens of which perfection are, perfect fixation, a moſt exact mixtion and union of the conſtitutive parts of thoſe Bodies, accompanyed with (requiſite) weight, ſound, and colour; capable of bearing a long fuſion, and a ſtrong ignition, without altering their qualities, and loſing of their ſubſtance: There are two of this nature, *viz.* the Sun and Moon, or Gold and Silver. Imperfect Metals are of two ſorts, *viz.* hard and ſoft; thoſe that are hard, are rather ſuſceptible of ignition then fuſion, as *Mars* and *Venus*, or Iron and Braſs; ſoft, are thoſe which are ſooner ſuſceptible of fuſion then ignition, as *Jupiter* and *Saturn*, or Tin and Lead. The Mercury or Quick-ſilver is accounted the ſeventh Metal, and is a liquid Metal, for this cauſe called *fluid*, as the other are named *ſolid*: Yet by reaſon of this fluidity, ſome do expel it from the *Claſſis* and number of Metals, and place it amongſt the ſubſtances that are nearly related to Metals, as being a kind of Meteor of a middle nature between; and even many Philoſophers, will have it the firſt matter of Metals.

Metals and Minerals are differenced in ſex, and accordingly ſeveral kind of Menſtrues are uſed for their diſſolution: ſo nothing but Regal water can diſſolve Gold, Lead and Antimony, which are accounted of the maſculine ſex; but ordinary *Aqua fortis* is ſufficient to diſſolve the others, which are accounted of the female ſex.

Before we put an end to this Section, ſome few Queſtions, which are uſually raiſed, about the nature of Metals, muſt be illuſtrated: The firſt Queſtion raiſed, is: *If when ſeveral Metals are melted together, any Metallick* Species, *differing from the Metals, which do make the whole Compound, is thereby raiſed?* To which, the Anſwer is negative, becauſe it is not a true mixture, much leſs a ſtrict and exact Union, but rather a Confuſion, ſince they may be again ſeparated aſunder. There is another Doubt alſo made upon this matter, *Whether or no Metals do ſpecifically differ amongſt themſelves, or only according to the more or leſs perfection*: But *Scaliger* anſwers to this, that Nature hath no more made Metals in order to the production of Gold, then framed other Creatures to the generation of Man; it may be added to this, that God created this variety of Metals for the perfection and beautifying of this Univerſe, and the ſeveral uſes wherein men do imploy them:

We muſt nevertheleſs acknowledge as a truth, that both Minerals and imperfect Metals participate of the nature of either of the two perfect Metals; and moſt commonly of both together, as it is evident by the extraction which thoſe can make, that are Maſters of the ſecret of this ſeparation, performed either after a preceding digeſtion, or by examining by the true inſtrument of Separation, external Fire, which excites and actuates the internal, potential Fire of things, and is the only Inſtrument of Philoſophers to verifie by deed what I have ſaid: Whence we conclude, that theſe imperfect Metals and Minerals do continually endeavour the perfection of their natural predeſtination, whileſt they are yet in their Mothers Womb; which they are able to do no more, when torn off from their Matrixes. This Queſtion is commonly followed by another, which demands, *Whether the power of Art doth extend to the changing of an imperfect Metal, and may advance it by this Metamorphoſis to the perfection of either of the great Luminaries?* To which our Anſwer is affirmative; ſince it is certain, that both Art and Nature applying Actives to Paſſives, are capable of great and noble tranſmutations. But the difficulty of ſucceſs is almoſt inſuparable: and this is that *Great Work*, which ſince ſo many Ages hath vexed the minds of ſo many obſtinate ſearchers, wearyed and weakened their bodies, and emptyed their Purſes.

The laſt Queſtion to be touch'd here, and ordinarily made, is, *Whether Gold may be made potable?* To which the Anſwer is, that it cannot be doubted of, ſince Experience doth ſhew that it may be converted into Liquor; but the chief point is to know, whether this Liquor can afford nouriſhment, as many do endeavour to perſwade: which we do deny, ſince there is neither correſpondency nor analogy between Gold and our Body, which is neceſſarily required between nouriſhment and the body nouriſhed: but there is no proportion between the Metallick and Animal Nature. Yet no doubt is to be made, but that this Liquor is a very Soveraign Medecine, if it be performed with a *Menſtruum* or diſſolvent friendly and amicable to our Nature, and capable to render Gold ſo volatile, that it may not be afterwards in the power of Art, to reduce it again to body. For being thus once prepared, it paſſes eaſily to the very laſt digeſtion, where it corrects whatſoever it meets with that is defective; and ſo it alters and changes our body for the better, provided the right Doſis and way of uſing it be known, otherwiſe it would rather prove a devouring Enemy, then a familiar and pleaſing Gueſt.

SECT.

SECT. VII.

Of Stones.

STones are hard Bodies, which neither are extenſible under the hammer, nor meltable in the fire. They are generated in their particular Matrixes out of a Juice, which hath the Idea and Lapidifick ferment imprinted in it ſelf: they receive their various colours, from the various Mines through which their Lapidifick juice, and their Mercurial fumes, or coagulating Spirit doth paſs. They are either opacous, or tranſparent: The Tranſparent are either with or with out colour; ſo in all likelihood we may ſay, that the Coagulative Spirit of Emerald paſſeth through a mine of Vitriol or Copper; that of Opal through a Sulphureous mine; of Ruby and Carbuncle through a golden one; Granats and ſome other like Stones of this nature, draw their colour from Iron, a proof whereof is, that they are attracted by the Loadſtone; and ſo we may conclude of others. But the Coagulative Spirit of Diamond and Rock Chryſtal, is only a pure and unmixt petrefying Spirit, deprived of all tingent Sulphureity; which by conſequence leaves in it nothing but that lovely and admirable tranſparency, for which they are admired.

It is noted, that opacous Stones, are not only generated in the bowels of the Earth or Waters, but alſo in the bowels and entrails of all kind of Animals, as the ſearchers of Nature have made it manifeſt.

Thus briefly we have run over the Nature of minerals: For in what concerns the Doctrine of their particular hiſtory, we muſt have recourſe to ſuch natural Philoſophers as have exactly and profeſſedly written thereof, as *Georgius Agricola* and *Lazarus Ercker*; for our intention is, only to make an Abridgement of the chief heads, to which you may refer all the natural mixts which depend upon, and flow from them.

SECT. VIII.

Of other Mixts, both Animate and Inanimate.

WE have ſaid above, that there were two kinds of Inanimate mixts, *viz.* Thoſe that are extracted from the bowels of the Earth, and thoſe that are not; it remains we ſhould ſpeak of theſe laſt, ſince we have, as much as the Laws of our Abridgement can ſuffer it, diſcourſed of the former. Thoſe which belong to this laſt *Claſſis*, are Juices, and Liquors, extracted out of Plants by expreſſion; as alſo mediately or immediately from Animals: As for Example, Wine, Oil, Vinegar, Gums, Roſins, Fruits, Fats, Milk *Cadavers* and their ſeveral parts, and many other things, which as remedies are uſed for the reſtauration of mens decayed health.

Animate Mixts, are either Vegetables or Animals; Vegetable or Plants are either perfect or imperfect: Perfect Plants are thoſe which have both root and ſtalk or ſurface: Imperfect, which want either of the two; * *Truſſoli* are of this kind: for their root makes all their ſubſtance, and cotrariwiſe Muſhroms, in which there appears little or no root at all. Perfect Plants are divided into Hearb, Shrub, and Tree; and each of theſe again ſubdivided into an infinite number of differing kinds, the names whereof are to be found in Herbals. The parts of perfect Plants, are principal, or leſs principal; Principal are thoſe which the Vegetative ſoul maketh uſe of in her functions, and they are ſimilary or diſſimilary: Similary again are, liquid or ſolid; Liquid are Juices and Drops, which if they be aqueous are coagulated into Gums, if ſulphureous in Roſins; and for this reaſon Gums diſſolve in Liquors of an aqueous nature; and Roſins cannot be diſſolved, but by Oils, and analogical Liquors. The ſolid parts are the ſubſtance or carneous part, and the fibres of the Plant. The diſſimilar parts, that is to ſay, thoſe which contain in themſelves a diverſity of ſubſtance, are perpetual or annual. Perpetual or laſting long, are the root, the ſtock, the rinde, the marrow and the branches: Annual are thoſe which renew every year, as the buds, flowers, leaves, fruits, ſeeds, &c.

* *Tuberes terræ*, Puffes.

As the plants then have a great variety of parts, and they divided into ſeveral kinds; ſo likewiſe Animals, which are compoſed of ſimilar and diſſimilar parts, are divided into ſeveral *ſpecies*: for they are either, rational or unrational; the irrational, or beaſts, are perfect or unperfect: Perfect are thoſe which are without cæſure, and for the nouriſhment of their parts do generate blood: Unperfect, ſuch as are Inſects, breed no blood and are divided by ceſures. All beaſts, whether perfect or unperfect, are either greſſile and marching, or reptile and creeping, or natatile, *i. e.* ſwimming, or volatile, *i. e.* flying. But if you deſire to be further inſtructed in the Hiſtory of Animals, read *Aldrovandus*, who hath treated of this ſubject with great exactneſs; and for the knowledge of Man and his parts conſult Anatomiſts.

Chap. VI.

In what manner Chymiſtry *worketh upon all theſe Mixts, to extract what is* pure *in them; and rejects their* impurity.

YOu ſee by the enumeration of theſe Mixts, of what vaſt extent is the Empire of *Chymiſtry*, ſince her operation is buſied upon theſe ſo different Compounds: for ſhe may chooſe any of theſe bodies, either to divide and reſolve it into its Principles, by making a ſeparation of the Subſtances which do compound it; or ſhe uſes them, to extract the myſtery of Nature out of them, which contains the *Arcanum, Magiſtery, Quinteſſence, Extract* and *Specifick*, in a much more eminent degree, than the body from whence it is extracted; becauſe this body, by Chymical Preparation which ſeparates *impurities*, for the perfection of this myſtery, is changed and exalted; as we ſhall make it plain in the Book of Operations. For it is not enough to ſtudy and read the Works of *Paracelſus*, and chiefly his Books of *Archidoxa*, which I have already recommended: but you muſt alſo uſe your hands, and come to the Practical part, if you will untiddle his Obſcurities, not heeding the time which therein muſt be ſpent, nor thinking much of the labour and charges; As moſt do, who by the reading of ſome few Authors, only grounded upon the authority and opinions of their Predeceſſors, neglecting experience and the painful ſearch of Natures ſecrets, think and imagine to attain unto great perfection, though Experience be one of the Columns of the beſt Natural Philoſophy, and conſequently of the trueſt Phyſick. That we may then the better attain to it, we ſhall here conclude the Theorical part, to come to the Practice; and by the help of one, illuſtrate the other the better.

The End of the Theory.

Part

Part II.

Of the abridgement of CHYMISTRY.

Book I.

Of the proper and neceſſary terms to underſtand and perform all Chymical *Operations.*

The *PREFACE.*

IN the Firſt Part of this Treatiſe, we have ſhewed unto you the Grounds upon which doth lean all the Theory of Chymiſtry : *But becauſe we ſaid in the Preface, that* Chymiſtry *was a Senſal Philoſophy, which admits only what the Senſes manifeſt and demonſtrate unto us ; it is time for us to come to the Practical part, and Operations depending of it, and to examine, Whether all what we have ſaid above, is grounded upon Senſe. No body muſt admire, that a Science ſhou'd become*

Operative; ſince Operation is only to the end of perfecting Contemplation, and Contemplation ſeemeth to be only to help Operation; ſo that theſe two ſeem to be inſeparable. And if it be true, that all Doctrine and Knowledge muſt begin by the Senſes, according to the Maxim which ſaith, Nihil eſſe in Intellectu, quod non prius fuerit in Senſu; *I think it very neceſſary that the Senſes be well informed and inſtructed by ſeveral Experiences, before you give your ſelf to the Theory, or begin to contemplate upon Natural things, leſt you fall into the error of thoſe ſuperficial Philoſophers, who pleaſe themſelves in arguing upon the Principles of ſome Doctrine, whereof experience diſcovers the untruth; as for Example: Is it not a very manifeſt and palpable error, to imagine that the Smoak or Fumes, which any Mixt doth yield by violent diſſolution, ſhould be a Fire or Elementary Air, or ſome unmixt ſubſtance; ſince, if they are examined in a Limbeck, or any other Veſſel or Receiver, experience will demonſtrate to the ſenſe, that that Flame or Smoak, are neither pure Elements nor imperfect Mixts; but that it is ſometimes the Body of a moſt perfect Mixt, as evidently appears by ſubliming of Brimſtone and Armoniack Salt, and the Fumes of Mercury, which is the ſame Quickſilver, who like unto that* Proteus *of the ancient Poets, takes all ſorts of ſhapes and colours; but returns again to its firſt nature, being revived.*

By this it appears, that it is not good to judge of things lightly; as to ſay that all Smoak is Air, becauſe it hath ſome reſemblance with Air: For though all Vapours and Exhalations are alike unto the ſight, yet nevertheleſs are they of a very different nature; as thoſe that examine them throughly, and ſearch them narrowly, by the help of Chymical Veſſels will diſcover; and this ſhall we demonſtrate by the ſeveral Operations, whereof we are to treat in this laſt Part.

But becauſe in the practical part of theſe Operations, we meet with ſeveral terms that are proper and eſſential to the Art of Chymiſtry, and ſeem to be of difficult underſtanding, it is neceſſary, before we enter into the diſcourſe of Operations, to explain their meaning. We ſhall then in this firſt Book, treat of the ſeveral kinds of Solutions and Coagulations; becauſe one of the chief ends of Chymiſtry is to ſpiritualize and corporifie again, thereby to ſeparate Purity from Impurity: after this, we will ſhew the ſeveral degrees of Fire; by the means of which, and the help of ſeveral Furnaces, and divers Veſſels, that true exaltation is attained unto, which from the myſtery of each Mixt's nature, doth extract the Arcanum, Elixir, Tincture, *or ſome ſublime Eſſence graduated to ſuch a height, as one drop or grain of theſe miraculous Remedies may without compariſon be more efficacious then many pounds of the groſs and bodily Mixt, out of which theſe Medicaments have been extracted.*

CHAP. I.

Of the ſeveral kinds of Solutions and Coagulations.

THough Chymiſtry takes for its object all natural Bodies, yet properly and particularly ſhe confines her Operations upon Mixt Bodies, which ſhe teacheth how to exalt by the help of Solution and Coagulation, who do contain under them ſeveral kinds of Operations, tending all either to ſpiritualize or corporifie, Minerals, Vegetables, and Animals: ſo that the exaltation of any Mixt or Compound, is nothing elſe but the pureſt part of the ſame, by the help of ſeveral Solutions and Coagulations often reiterated, brought to its higheſt perfection. To attain this point, Purity firſt muſt be ſeparated from Impurity, which is performed materially or formally: Materially, by cribration or ſifting, ablution or waſhing, edulcoration or ſweetening, deterſion or cleanſing, effuſion or powring, colation and philtration, or running through a bag, and deſpumation: Formally, by diſtillation, ſublimation, digeſtion, and ſeveral other reiterated Operations, whereof hereafter.

The ſeparation of Purity and Impurity being performed, to obtain a perfect exaltation of the Mixt, the impurity of it muſt be rejected, and that which is pure be firſt put in Solution, then Coagulation; which is done either by reducing it to very ſmall Particles, or to Liquor, or elſe in a ſolid Body, by help of the following Operations, *viz.* Limation or filing, raſion or ſcraping, pulveriſation or reducing to powder, alkoholiſation or reducing to atomical parts, inciſion or cutting, granulation or reducing into ſmall grains by melting, lamination or converting into thin Plates, putrefaction, fermentation, maceration, fumigation, which is either dry or moiſt, cohobation, precipitation, amalgamation, diſtillation, rectification, ſublimation, calcination, either actual or potential, vitrification, projection, lapidification, extinction, fuſion, liquation, cementation, ſtratification, reverberation, fulmination or detonation, extraction, expreſſion, inceration, digeſtion, evaporation, deſiccation, exhalation, circulation, congelation, cryſtallization, fixation, volatiliſation, ſpiritualization, corporification, mortification and revivification; all which terms, to remove obſcurities in the underſtanding of the Artiſt, we will further illuſtrate in this Chapter.

Cribration, is when the matter, after it hath been pounded in a Mortar, is ſifted through a thin Cloth or a Sieve, the one is for the exact contuſion, the other for the groſſer.

Ablution or lotion is, when the matter to be cleanſed from its groſſer impurities, is waſhed in water; but when the matter by its weight is fallen in the bottom of the Veſſel, and the water powred out by inclination, it is called *Effuſion*.

Edulcoration is, when the ſpirituous, ſaline, and corroſive parts of Chymical Preparations, performed by actual or potential calcination, are ſeparated.

That matter which cannot endure water without alteration, or loſs of its ſubſtance, is purged by *Deterſion*; and if it be put in any convenient Liquor, and then afterwards groſly expreſſed, either through a Linnen, or ſome other Strainer of Cloth or Tamy, it is called *Colation* or Percolation: but if this Operation be performed through ſome more compact ſubſtance, it will be called *Philtration*, which is performed either by the Cloth, Paper, or Rag; that which is performed through the Paper, is cleanlier and exacter.

Deſpumation is nothing elſe, but ſeparating of the skum, or other impurities which ſwim above the matter, with ſome proper Inſtruments to that purpoſe.

Limation is the ſolution of continuity of ſome mixt Body, performed with a File of Steel; it is uſed in all the three Families of Bodies; for, the Bones of Animals, the Wood of Vegetables, and the Bodies of the moſt compact, hard and ſolid Metals yield to the File.

Raſion comes very near Limation, but is performed with a ſharper Inſtrument, as a knife, or ſome of the like nature; it may alſo be refered in a manner to Inciſion.

Pulverization or Contuſion, are nothing elſe but the Reduction of ſome Mixt into Powder, by means of Trituration or grinding upon a Marble or Porphyry, or pounding in a Mortar; and if the matter be reduced to an impalpable and imperceptible Powder, it is called *Alkoholiſation*, which is alſo ſometimes ſaid of liquid things, as the *Alkohol* of Wine, or other volatile and inflamable ſpirits, when theſe ſpirits are ſo deprived of their phlegm and wateriſh part, that they conſume and flame away with the matter wherein they were dipt, be it Linnen, Paper, or Cotton.

By *Granulation*, Mineral and Metallick Bodies are reduced to ſmall grains, and by Lamination extended in ſmall and thin Plates, as are Gold, Silver, Leaf Copper, &c.

Putrefaction is, when the Mixt by a moiſt heat without any mixture tends to its corruption: and if it be performed by the mixture or addition of any Ferment, as Tartar, common Salt, Yeaſt of Beer, Leaven of Bread, or Lees of Wine, it is then called Fermentation.

Maceration is, when any matter is put in a *Menſtruum* or proper liquor to infuſe, that liquor being choſen according to the deſign or intention of the Artiſt, to extract the vertue of the Body upon which it works. This Operation requires a fit and competent time for compleating the Extraction, which retards or advances, according to the more or leſs ſolidity and compactedneſs of the body wrought upon.

Fumigation is a Corroſion of the external parts of a body by a vapour, or ſharp and corroding Exhalation: If it be by a vapour, as is that of Vinegar, it is a moiſt fumigation: if by Exhalation, as the fumes of Lead or Quick-ſilver, it is a dry fumigation, calcining laminated Metals, or reduced in Plates, and making them ſo crumbling and brickle, that they may afterwards be eaſily reduced to powder.

Cohobation is done, by often powring again the *Menſtruum*, extracted out of one or ſeveral Mixts upon its own feces, or the remainder of thoſe Mixts in the Receiver, either to draw the Central Vertues encloſed in thoſe Compounds, or to cauſe the ſame feces, to reſume and take back, what in the diſtillation they had ſuffered to fly up and volatilize by the action of heat, and in this only Operation doth Cohobation conſiſt.

Precipitation cauſeth the diſſolving *Menſtruum* to quit the body which it had diſſolved, which is performed by the analogy that Salts have with Spirits; for, *Whatſoever is diſſolved by Spirits, is precipitated by Salts; and contrarywiſe.* This Operation requires the particular conſideration of the Artiſt, becauſe it gives great light, and is a great key to comprehend the generation and corruption of natural things.

Amalgamation is a particular calcination of Metals, which ſome Authors do call *Philoſophical Calcination*: It is performed by the union of Mercury or Quick-ſilver with the leaſt particles of Metals, which doth ſo ſeparate and open them, that they become unctuous and extenſible upon the hand; ſo that evaporating the Quick-ſilver with a convenient heat, the Metals are reduced to a very ſubtile *Calx*, which cannot be performed ſo well by any other means.

Diſtillation is, when the matter incloſed in a Veſſel, drives and ſends up vapours in another Veſſel, by the help and activity of Fire: There are three *ſpecies* of it. The firſt, when the vapour of diſtilled Subſtances do aſcend. The ſecond, when the ſame vapours are driven by the ſide of the Veſſel : And the third, when downwards : all theſe according to the diſtillable matters, and the fitneſs of the Veſſels for Operation.

Rectification is nothing elſe but a reiterated Diſtillation, and that to ſubtilize the more the diſtilled vapours, or ſeparate ſome Spirit from its Phlegm, and the more terreſtrial and groſs parts, according as the Spirits are, either ſharp and fixed, or volatile and inflamable.

Sublimation is an Operation, by which the action and heat of Fire, elevates a whole body in dry Exhalations, or at leaſt ſome part of it which cleaves and condenſes it ſelf in thin and ſubtile *Flores*, or ſometimes thick, compacted and preſſed in the top of the Veſſel : this manner of Operation is oppoſed to *Precipitation*.

Calcination is a violent action, which reduces the Mixt to *Calx* and Aſhes. It is double, actual and potential : the actual is performed by flaming Wood or kindled Coals, which are the material fire : Potential Calcination is that which is made by the ſecret and potential fire of ſtrong and diſſolutive Waters, or *Aqua Fortis*, ſingle or compounded, and by the vapours and corroſive fumes, as it is obſerved in Precipitation and Fumigation.

Vitrification is the change of Metals, Minerals, Vegetables or Stones in Glaſs, and that by projection after their fuſion, or by addition of Salts, *Alkali* or fixt, or extracted from Lees, which do penetrate and purifie theſe ſeveral ſubſtances, and vitrifie them by giving them fuſibility and tranſparency : There are many nevertheleſs Opacous alſo, which are uſed for enamelling, and called *Amels*.

Lapidification is when Metals are changed into Stones or Paſts, which in a kind are of a middle nature, between Metallick and Tranſparent Glaſſes ; and Amels, becauſe they are ſuſceptible of a fair poliſhing.

Extinction is the ſuffocation and cooling of a hot kindled ſubſtance in ſome Liquor, either to the end of extracting its vertue and communicating it to the Liquor, or to impart ſome adventitious quality to the ſubſtance immerſed ; as when, for Example, *Tuty* or *Lapis Calaminaris* is extinguiſhed in Fennel Water or Vinegar, to make them more efficacious for the cure of the Eyes ; as alſo all Iron and Steel Tools are dipt, to become thereby more apt for poliſhing, and receive a hardneſs, and conſequently an edge.

Fuſion is properly ſaid of Metals and Minerals, and is performed by a great and violent Ignition. And *Liquation* is only ſaid of the fat of

Animals, Wax, and unctuous fat and reſinous ſubſtances of Vegetables performed by a temperate heat.

The Impurities of Metals are removed by *Cementation*; it ſerves alſo to examine them, whether they are true or falſe, as alſo to leſſen their bulk by the compreſſing of their parts, which is performed by ſtratification, making a bed or lay of Cement, another Metallick Plates, and ſo continuing *ſtratum ſuper ſtratum*, or lay upon lay, till the Veſſel be top full; but you are to note, that the firſt and the laſt lay muſt be of Cement; after which the Pot or Crucible muſt be exactly luted, to give a Circular fire by degrees until fuſion.

Reverberation is an Ignition, by which Bodies are calcined with a flaming fire in a Reverberatory Furnace: Whether it be done to the end corroſive Spirits may be ſeparated from it, or to ſubtilize and ſoften the body with that Operation.

Fulmination or *Fulguration* is an Operation, by which all Metals, excepting Gold and Silver, are meteorized, and driven or reduced into vapours, exhalations, and fumes; by the help of Lead in a Copel, with violence of fire kindled and animated with good and ample Bellowes.

The end of *Detonation* is to drive away and ſeparate all the Sulphureous and Mercurial parts of a Body which are not pure, that there may remain the earthly part only, which is accompanyed by the internal and fixt Sulphur, in which is properly inherent the vertue of Minerals. This Operation is performed by the help of Salt-peter or Nitre, as it appears in the Precipitation on Diaphoretical Antimony made by Detonation and Fuſion.

Extraction is, when the eſſence or tincture of a Mixt is extracted, by help of a *Menſtruum* or convenient Liquor, which the Artiſt doth evaporate away, if it be unuſeful and of ſmall value; but if of any price, he draweth it again by Diſtillation, to uſe it in other Operations; that which remains in the bottom of the Veſſel is called Extract.

Expreſſion tends to ſeparate the ſubtileſt from the groſſer parts of the body, according to the intention of the Artiſt, to preſerve the one or the other, it is performed by a Preſs which ſcrewes, or otherwiſe, and Tables.

Digeſtion is one of the principal and moſt neceſſary Operations of Chymiſtry; becauſe Mixts are made tractable by it, and capable to yield us what we deſire out of them; it is performed by the means of a convenient *Menſtruum*, and a ſlow and long heat: moſt commonly ly joynted Veſſels meeting at the mouth, called properly Circulatory, are employed for this purpoſe, that nothing of the volatile ſpirits of the digeſted Subſtance may be loſt; to this Operation are commonly made uſe of, the heat of a watery Bath (*Balneum maris*) or vapours, or aerial, or the heat of Horſe-dung, Aſhes, or Sand. *Digeſtion* hath a great affinity with *Maceration*, they do notwithſtanding differ among themſelves; in regard that there is a kind of coction performed in the act of Digeſtion, which is not done in Maceration.

The *Menſtruum*, which hath been uſed in Diſſolution or Extraction, is by evaporation reduced to vapour, and this way is *Deſiccation* performed: but by Exhalation the dry ſpirits are carryed away from the ſubſtance by the vertue of the fire, and reduced to Exhalations.

Circulation is an Operation, by which the ſubſtances, contained in the bottom of a Pelican, or Circulatory Veſſel, are driven upwards by the action of heat, and thence fall again upon themſelves, either to volatilize them by the help of ſpirits, or to fix the ſpirit by the frequent and reiterated contact of the body; which is a thing very well worthy the contemplation of him that will attain the true knowledge of Nature.

Congelation is, when the ſolid parts of Animals are, with ſome convenient *Meſtruum*, reduced to a Jelly by Elixation: Such are the Jellies of Horns, Bones, Muſcles, Sinews, and Cartilages; but you are to note, that this Congelation proceeds only from the volatile Salt, which abounds in Animals: As *Cryſtallization* is properly ſaid of Salts purified by ſeveral Solutions, Filtrations, and Cryſtallizations, after the Liquor in which they are contained, hath been evaporated to a skin.

Things volatile are fixed by *Fixation*, as contrarywiſe Fixt are volatilized by *Volatilization*. That ſubſtance is called fixt, which abides and is permanent in the fire; as volatile is called that which flyes and exhaleth it ſelf with the leaſt heat. But note here, that as there are ſeveral degrees of heat, ſo there is ſeveral things fixt, and ſeveral volatile.

Spiritualization doth change the whole body into Spipit, ſo that it becomes no more palpable nor ſenſible to us: And by *Corporification*, the Spirit re-aſſumes its Body, and manifeſts it ſelf again to our ſenſes; but the body ſo qualified is an exalted body, very different in vertue from that from which it hath been extracted, ſince this body ſo glorified contains in it ſelf the myſtery of its own Mixt.

By *Mortification*, Mixts are as it were deſtroyed, and loſe all the qualities and vertues of their firſt nature; to acquire others much ſublimer and more efficacious, by the help of revivification. *Paracelſus* meant it of this Operation, when he ſaid, That the power of death was efficacious, ſince no Reſurrection can be without her: And as the Apoſtle St. *Paul* ſaith, *It is neceſſary, that the grain of Corn ſhould firſt dye in the Earth, before it can live again, and multiply it ſelf in the Ear which it produces.*

CHAP. II.

Of the ſeveral degrees of Heat and Fire.

THe moſt potent Agent that Nature hath furniſhed us withall under Heaven, to perform the Anatomy of Mixt Bodies, is *Fire*; which to feed and maintain it ſelf, doth need firſt a combuſtible oily and ſulphureous matter, either Mineral as Sea-coal, or Vegetable as Chark-coal, and the Oils of Vegetables; or finally, Animals Fats, Suets and Oils of Animals. Secondly, Fire needs a continual Air, that may by its action drive away the excrements and fuliginous emanations of the ſubſtances which are burned, and that may animate the Fire, to make it more or leſs act upon its ſubject; and from this neceſſity it is that ſome, though improperly, have affirmed, that the Air was the true food and nouriſhment of Fire. If we will exactly ſpeak, it cannot be ſaid, that Fire receives more or leſs by it ſelf or in it ſelf, or as Philoſophers ſpeak, admits of intention or remiſſion; Though the matter upon which it doth act, may receive great variety of degrees of heat, according to its nearneſs or diſtance, or interpoſition of things which may receive the impreſſion of heat; whence it neceſſarily follows, that the ordering of the heat of Fire, doth conſiſt in a juſt and convenient quantity, adminiſtred by the Artiſt, according to the nature and condition of the matter upon which he worketh, and according to the means or inſtruments which he uſes, to whom it is required he ſhould give a proportionate diſtance.

To encreaſe the Fire, it is required, either to add a greater quantity of Coals in the Fire, or if there be enough, and that the Artiſt doth find it not to burn according to his expectation, there muſt be more Air let in, either by the door or mouth of the Furnace which receives the Fire, or by the Aſh-hole, which is better: as alſo by opening the Regiſters, which are uſually made either at the upper part, or in the ſides of the Furnaces, to let out exhalations and fuliginous vapours, which commonly ſuffocate the Fire; or laſtly, by blowing large bellowes, and of a capacious body for room of winde. From this that is ſaid may be conceived, that Fire may be decreaſed and weakned by the contrary ways, as ſhutting the Dores and Regiſters, to hinder the entring of Air, and iſſue of fuliginous ſubſtances; or the combuſtible matter muſt be diminiſhed, or the Fire covered with cold Aſhes, or a plate of Iron, or a Brick, to hinder ſuch diſorders and accidents as uſually happen in the midſt of the work.

As for the diſtance of the Veſſels containing the matter, it can only be judged according to the nature of the matter of their compoſition, or the Mediums interpoſed between, it may nevertheleſs ſtand as a general rule, that there ought to be a diſtance of about eight inches, between the Grate which contains the fire, and the Diſh or part upon which the bottom of the Veſſel which is to receive the heat doth reſt: For the action of Fire upon bodies is mediate or immediate; Immediate, when without oppoſition Fire acts upon the matter, or Veſſel that contains it, whether it be a Crucible, Retort, or any other thing; and this is commonly called *Open Fire*; Fire of Calcination and ſuppreſſion: Mediate is, when any thing is interpoſed between the Fire and the matter, which doth hinder its deſtructive action; whereby the Artiſt is enabled to govern it, not otherwiſe then a skilful rider manages a Horſé, and keeps him in aw, by the help of the Bridle which he holds in his hand.

We ſhall compriſe under nine chief Claſſes, the ſeveral differing degrees of Heat, and theſe the ingenuous Artiſt may yet vary in an infinite number of manners, according to his intention, and that the quality of the Mixt upon which he works, doth require it: Thoſe differences are as followeth.

We will take the firſt degree of Heat from the greateſt extremity of its height, which is the fire of Flame, which calcines and reverberates all things; and this is that properly, which is capable to turn the moſt ſolid and fixt Bodies into Vapours and Exhalations.

The ſecond is that of Coals, which properly and principally ſerves for Cementation, for colouring and purging, as well as for contracting Metals, as alſo thoſe Minerals which participate moſt of Metallick nature. It is ſometimes called *Circulatory* Fire, (*Ignis rotæ*) ſometimes Fire of ſuppreſſion, according as the fire is placed above, under, or at the ſides.

The third degree of Intenſe Fire, is that of the Iron Plate, when it is red hot at the higheſt; which is a kind of heat proper to try Metallick Tinctures, as well as the degree of Fixation of Mineral remedies.

The fourth is that which is maintained by the filings of Iron put in a *Capſula* or Kettle of the ſame Mettal; and this, becauſe this ſubſtance being once heated, preſerves its heat much longer then the other, and communicates it to the Veſſel put into it, which contains the matter that is either to be diſtilled, digeſted or concocted, with a greater activity.

The fifth is the Fire of Furnace, with Sand interpoſed to the Veſſel; it preſerves, and yields a leſs heat then that of the filings of Iron, becauſe it takes heat more ſlowly, and ſooner cooleth, and is more eaſily kept in order, by the help of the Regiſters of the Furnace.

The ſixth is the heat of Aſhes, which in reſpect of the fore-going degrees, begins to be temperate: This Fire commonly is uſed in the Extractions of ſuch Mixts as are of a middle ſubſtance, either Animals or Vegetables, as alſo in their digeſtions and evaporations.

The *Balneum Mariæ*, or (to ſpeak more properly) *Balneum Maris*, maketh the ſeventh of our Claſſes or degrees; and it is the moſt conſiderable of all, as that which conſtitutes the moſt excellent and uſeful part of the work of Chymiſtry; becauſe an underſtanding Artiſt may manage it with that judgment and proportion that he may with its help perform a numberleſs variety of Operations, which by any other imaginable way, are not to be attained unto: For this Bath may be boiling hot, half boiling, ſimpring, luke-warm, half luke-warm, and be yet ſo ordered as to keep the middle proportions of all theſe degrees too.

The eighth degree of well graduated Fire, is the Vaporous Bath; for the Veſſels may be only put to the vapour of the water contained in the Bath: And for the ninth, there may be put about the Veſſel ſawings of Wood to receive the vapour, as alſo Oaten Chaff, or any other, ſhred very ſmall, becauſe they are bodies which eaſily attract this vapour and heat, and keep it long in a ſlow, and almoſt perfectly equal temper.

Beſides all theſe degrees and kinds of Heat ſpoken of, there remains yet the Lamp-fire, which may be graduated according to the diſtance or nearneſs of the Lamp, which ſhall have one or more Weeks; theſe weeks ſhall have two, three, four, or more threds, according as you intend to give a leſs or greater temper of heat to your matter; this Heat is chiefly uſed for Coction and Fixation.

The invention of ingenuous Chymiſts hath found out, beſides this, ſeveral kinds of cheap Heats, as that of the Sun, either expoſing your matter to the reflexion of the rayes of his light, received by ſome Body, more or leſs capable to reflect them; or concerning the rayes of the ſame Light, by the help of a Burning Glaſs, an Inſtrument whoſe invention may ſtrike with amazement the beſt Philoſophers, that are not well acquainted with the ſphere of its activity, ſince the moſt obvious effects of it are, to melt Metals, according to the ſection and bigneſs of the diameter of theſe admirable Inſtruments. But that which of all is more worth enquiry, and ſurprizes more, is, that this Fire is a Magical Fire, differing from all other; ſince the vulgar is deſtructive, and this to the contrary preſerves and multiplyes, as experience doth verifie in the *Solar Calcination* of Antimony, which loſes its impure Mercury and Sulphur, vapouring away in this Operation, whereby it would be thought the body ſhould diminiſh; whereas it acquires a cordial and diaphoretick vertue, with a conſiderable addition of weight: which is thus proved. If you calcine in vulgar fire ten grains of this Mineral, it diminiſheth to four, and conſequently there remains but ſix, which have yet a Cathartick and Emetick faculty: but if you calcine the ſame quantity with the Solar Fire, beſides that it loſes its ill qualities, by the Exhalation made of its Impurities, which no queſtion have ſome weight, and ſeem in the Operation to have diminiſht the ten grains; you ſhall, inſtead of that, the Preparation being ended, find twelve grains of matter endowed with an admirable vertue; and this with juſt reaſon ſtrikes into amazement the ſubtileſt and moſt ſearching Wits; for, compare this to the other Operation, and you cannot but confeſs, that the augmentation is of a juſt full half. But it will allay ſomething your aſtoniſhment, if you are acquainted a little more with the nature of this miraculous Fire, and can comprehend, that Light is that *Promethean* Fire, which gives life to all natural bodies, is their Principle, and indiviſibly joyns it ſelf to its like, whereſoever it meets with it in any ſubject.

Chymical Artiſts do likewiſe make uſe of Horſe-dung, which yields a putrefying heat, ſpecially recommended by *Paracelſus*, in the opening of the moſt ſolid and fixt Bodies, as are thoſe of Metals and Minerals: To extract the eaſlier thoſe noble remedies which he doth teach us, we may ſubſtitute to the Horſe-dung, that of hot Baths and Mineral Springs heated by Nature it ſelf, as alſo that of *Balneum Maris*, which is Artificial, provided the requiſite proportions be underſtood.

CHAP.

Chap. III.

Of the variety of Veſſels.

THe matters which the Artiſt works upon, are not often put on the open bare fire: But that it is neceſſarily required they ſhould be encloſed in fit and convenient Veſſels, according to the intention of the work; which Veſſels are to be ſet artificially and with great judgment upon the fire, whoſe action is mediate or immediate; to the end that the extracted ſubſtances vaniſh not, and be loſt without proof, but rather carefully and curiouſly preſerved: We ſhall treat in this Chapter of the variety of thoſe Veſſels, and the ſeveral uſes unto which they are ſerviceable.

Now theſe Veſſels are to be conſidered either according to their matter, or their form; becauſe they are the two eſſential parts, which make them to be uſed in the Operations of Chymiſtry, and their difference is as great, as the fancies and inventions are various in the minds of Artiſts. And as they are ſince many Ages in queſt of the perfection of the Operations of this Art, ſo ſhall we only trace, in more general terms, the greateſt part of the more neceſſary Inſtruments, to leave a latitude of liberty to the invention of thoſe which will addict themſelves to this Noble Art, after they are once introduced to attain to the moſt ſecret and abſtruſe knowledges of it, by the rare Preparations which are made by the means and aſſiſtance of the ſame.

There muſt ever be a care had to chooſe the cleanlieſt matter for the fabrick of Veſſels, which muſt alſo be preſſed and compacted, that the ſubtileſt portions of matter may not tranſpire, and that the ſubſtance of the Veſſels may not communicate any forain quality to the matter, whether ſingle or compounded, upon which the Chymiſt doth operate. Glaſs is the body, which excluding all others, would be the fitteſt to be employed, both by reaſon of its compactedneſs, and cleanly nature, were it capable to endure all the actions of Fire; but its fuſibility, and the ſeveral accidents which may cauſe it to break, notwithſtanding all the care and fore-ſight of Artiſts, make it neceſſary to have a recourſe to ſome other matters which may be capable of reſiſting Fire, and may not break ſo eaſily: As, for one, to Potters Clay, which furniſhes ſeveral Veſſels to the ſervice and uſe of Chymiſtry, according to the ſeveral kinds of Clay, and their poroſity; for if it be ſaid, that it may be glaſed within with ſome Mineral or

Metallick ſubſtances (as Leaden oar, &c.) which will hinder tranſpiration, it is as ſoon anſwered, that this Preparation makes them not differing from the nature of Glaſs, and ſo conſequently ſubject to the ſame inconveniencies, as Glaſs is: For, beſides their ordinary brickleneſs, there muſt alſo a great regard be had, not to expoſe them too ſoon from heat to cold, nor from cold to heat, becauſe compreſſion or rarefaction of the parts, and the air in them, would ſoon cauſe them to fly in pieces.

There is alſo ſome uſe of Metallick Veſſels for many Operations in this Art, which without their help would prove very difficult, yea almoſt impoſſible; as much by reaſon of the activity of Fire, deſtroying and conſuming whatſoever comes near it, as for the ſeveral matters upon which the Artiſt doth uſe to work: for, to contain ſharp, acid, ſaline, nitrous, vitriolick and aluminous ſubſtances, Glaſs, or leaded or glaſed Pots, are neceſſary; as contrariwiſe when you intend to diſtil ſpirit of Wine in abundance, Metallick Veſſels that may long abide an open Fire, and contain much matter, are requiſite. Diſtilled Oils of Vegetables cannot alſo be drawn without theſe Veſſels, becauſe theſe Operations require a violent and long fire to diſunite the Balſamick and Ætnereal parts from the other, which are terreſtrial and ſaline, which cannot be ſeparated without much ebullition, and ſtore of water. But you are to note, that when you intend to work upon Mercury (which you are to underſtand henceforth to be Quick-ſilver) you muſt never make uſe of any Metallick Veſſel, becauſe this Metallick Body will eaſily amalgam and mix it ſelf with the greateſt part of Metals, though with greater eaſe with ſome then others. Thus much in ſhort concerning the matter of Chymical Veſſels.

As for the diverſity of their form, it is diſtinguiſhed according to the requiſite or intended Operations. For when the diſtillation is intended, we uſe *Cucurbites* with their head——or Limbeck, as alſo the braſs Body, or *Veſica*, covered with the Moors head, made of the ſame Metal or Tin, leſt the Spirits or diſtilled Oils ſhould draw any vitriolick ſubſtance from the Copper; And to prevent the ſame inconveniency, it will be very requiſite, that all the Copper Veſſels which are to be uſed by the Artiſt, be tinned within: For the diſtillation of new Fruits, juicy Plants, or Flowers, are to be uſed great and large Baſons, on the top whereof a Tin Bell or diſtilling head is to be applyed: And theſe three kinds of Veſſels, are ſufficient for the diſtillation of all vapours extracted by aſcenſion. But for performing the diſtillation of ſuch vapours as are droven by the ſides, Retorts and great Receivers are neceſſary, as Artiſts have found by experience, becauſe ſuch vapours cannot aſcend by reaſon of their heavineſs; it is alſo ſometimes requiſite to have earthen Retorts, or of Metal opened above, as alſo Receivers with three necks or channels, to change and fit others to the firſt, with more eaſe and diſpatch when occaſion requires, and to condenſe more eaſily and ſpeedily the Exhalations and vapours which the matter urged by the Fire's action doth yield; for were it not for that, either of neceſſity the Veſſel containing the matter muſt break, or the Recipient fly into pieces, if not changed, becauſe it would not be capacious enough to contain the vapour or ſpirits droven in by the Fire.

For digeſtion long neck'd Matraſſes and narrow mouth'd, are neceſſary: double Veſſels may alſo be uſed to this purpoſe, which are two Veſſels whoſe mouths are placed one in the other, that nothing of what is fitting to be kept in, may evaporate.

Pelicans are uſed for Circulation, as alſo twins, which are two Cucurbites with their heads, whoſe noſes are reciprocally inſerted in the body of the oppoſite Cucurbite. The double Veſſels may alſo be made uſe of for this Operation, but they are not ſo commodious. For ſublimation Aludels are employed, or ſome analogous Veſſels, as ſeveral earthen Pots put one in another; as alſo diſtillatory heads, or blind Limbecks without noſe: ſtrong and well glued blew Paper ſhaped in a *Conick Figure* is alſo uſed, to receive the Exhalations of the ſublimed matters, as we ſhall teach more particularly in the ſublimation of *Benjamin* hereafter.

For Fuſion or melting, as alſo Cementation and Calcination, it is requiſite to be provided with Crucibles made with a good Earth, and well abiding the Fire, and capable to keep the Salts in fuſion, and hinder the vapouration of their ſpirits, as alſo to keep Metals in fuſion: There muſt alſo be coverings for the Crucibles, that may eaſily be put on or removed with the Pincers, that no Coals or any other Mixture, may fall into the matter whileſt it is upon the fire, or that they may exactly be luted to the Crucibles, as it is practiſed in Cementations.

Finally, the Artiſt muſt be provided with Pans, Diſhes, Spoons, and Spatula's of Glaſs, white Earth, Jugg-metal, or ſome other good Earth glaſed, or not glaſed or leaded, to uſe in Diſſolutions, Exhalations, Evaporations, Cryſtalizations, and particularly for Diſſolutions in the cold Cellar or open Air.

Thoſe that will employ themſelves about true Fixations, ſhall need the Philoſophers Egg, or another Inſtrument of my own invention, which I cannot call otherwiſe, then the Egg in the Egg, or *Ovum in Ovo*: It doth ſomething participate of the nature of a Pelican for the Circulation, and of that Inſtrument which is called *a Hell*, becauſe whatſoever is put in it can never go out again: This Veſſel is proper for the fixing of Mercury, and hath the figure of an Egg encloſed in another; ſo that it is as the Abridgment and *Compendium* of theſe three Veſſels, uſually employed by Artiſts in their work of fixation.

But as the exact deſcription of all theſe Veſſels cannot be ſo well performed by writing; and that ocular demonſtration doth much more advantage the underſtanding, than reading can do: we have thought fitting in this regard to ſatisfie the Readers curioſity, by exhibiting in a draught, in the beginning of this Chapter, the delineation and models of the ſeveral Veſſels ſpoken of.

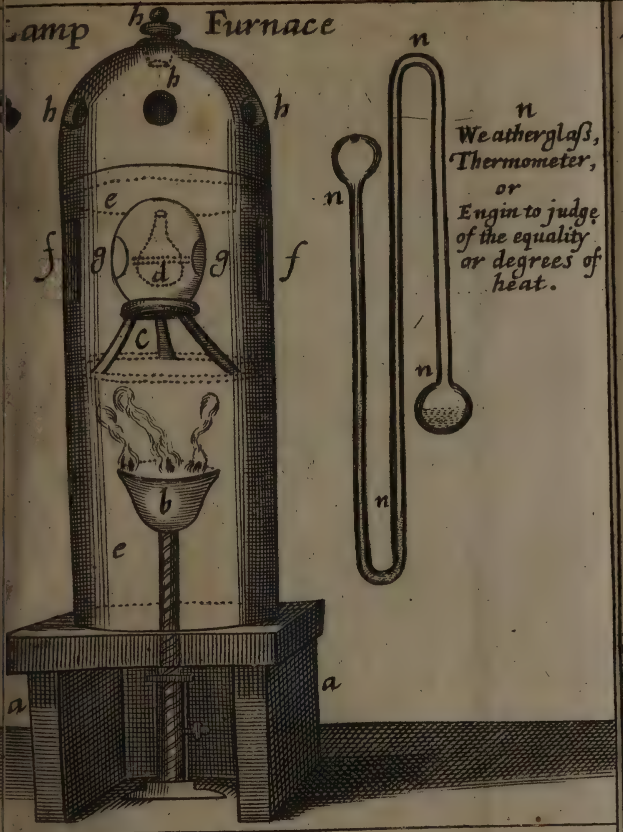
CHAP. IV.

Of the Diverſity of all ſorts of Furnaces.

IT doth not ſuffice, that the Artiſt be provided with Fire and Veſſels, he muſt have alſo his Furnaces to regulate and govern his heat, and put his Veſſels in that degree of Fire, which he ſhall judge moſt fitting and convenient for the matter in them contained. Furnaces are Inſtruments deſtinated to thoſe Operations, that are performed by the help of Fire, that heat may be as it were kept in aw and bridled, to ſubmit it ſelf to the judgment, skill, and intention of the Artiſt. They have ſeveral names given them, according to the ſeveral Operations to which they are appropriated: For, they are either fixt and immoveable, or moveable and to be tranſported. We will only ſpeak here of the Unmoveable, ſince they are the moſt uſeful kind for Chymical Operations; leaving the other to the invention and fancy of thoſe whom their curioſity leads to this noble Art. The matter of Furnace is threefold; Bricks, Clay, and Ironwork; their form is according to their uſe.

Every Furnace muſt conſiſt of four neceſſary parts, of whatſoever form they be, which are; Firſt, the Hearth or Aſh-room, with its hole or mouth, to take away the Aſhes falling from the Coals. Se-

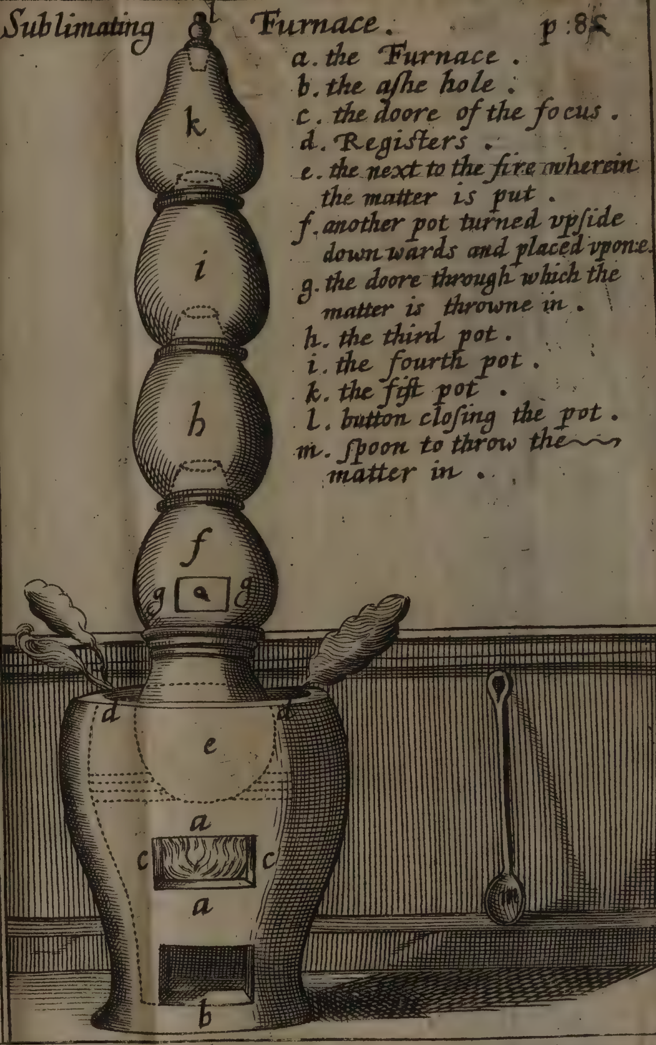
Lamp Furnace



a. the Basis of the Furnace.
b. a Lamp which may be raiſed and depreſſed with a ſcrew.
c. Trefoot, to ſet upon the Veſſel.
d. the Veſſel, with the Philoſophical egge.
e. firſt, ſecond and third peece of the Furnace.
f. glaße Window, to looke upon the matter.
g. another Oval window oppoſit and anſwering *f*.
h. Regiſters.

Sublimating Furnace.

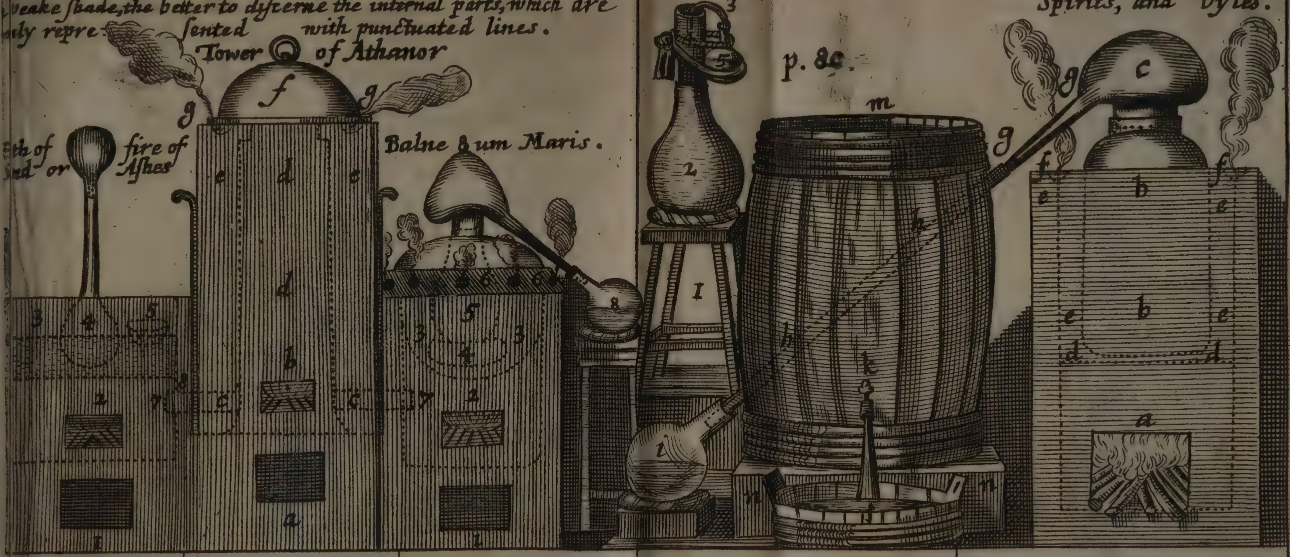
a. the Furnace.
b. the aſhe hole.
c. the doore of the focus.
d. Regiſters.
e. the next to the fire wherein the matter is put.
f. another pot turned upſide down wards and placed upon e.
g. the doore through which the matter is throwne in.
h. the third pot.
i. the fourth pot.
k. the fift pot.
l. button cloſing the pot.
m. ſpoon to throw the matter in.



is to be noted in these Figures and the follow:
There are ſome Geometrical, ſome Optical made with
veake ſhade, the better to diſcerne the internal parts, which are
ly repreſented with punctuated lines.

Veſſel to ſeparate the diſtilled Oyles.

Furnace and Veſſels for the Diſtillation of Waters Spirits, and Oyles.



the aſhe hole.
he focus or fire rome,
place where the
s or Sand for the
are placed.
Matraſʒe.
glaſſe diſh.
he Regiſter of fire.
e entrance of the
or heat from
e Tower of Athanor
the Iron plate or
ſſel containing the
nd or aſhes.

a. the aſhe hole.
b. the focus or fire roome
c. the paſſages made for comunication of the fire.
d. the empty place of the Tower.
e. the ſolid part of the Tower.
f. the cover of the Tower.
g. two ſeverall circles wherein the cover is inlayd.

1. the aſhe hole.
2. the focus.
3. the kettle where the water of the Balneum is put in.
4. a round (of wood, hay, or ſome other ſoft matter) to keepe vp the Limbeck body.
5. the cucurbite with its Limbeck head.
6. the Regiſters of fire.
7. the ſtoole or table to keepe vp the Recipiem
8. the Recipiem.

a. the fire.
b. the glaſſe body for diſtillation (vesica)
c. the Moores head.
d. the iron bar which keepes vp the glaſſe body.
f. the Regiſters of the fire
g. the pipe or noſe of the Moores head.
h. the pipe (ſometimes worme paſſing through the barell full of water.
i. Recipiem.
k. the cock to draw out the water when it muſt be changed.

l. a tub to receive the water let out.
m. the barrell or caſke containing the water to coole and condenſe the ſpirits.
n. the prop or ſupport of the barrel or caſk.
1. a ſtoole or ſmall table to keepe out the recipiem.
2. recipiem with the water to be ſeparated.
3. Cotton drawing the oyle and ſwiming aboue the water.
4. Oyle ſwiming above the water.
5. a ſmall glaſſe viall to receive the Oyle.

Veſsel to alkolize the Spirit of Wyn
n the very first diſtillation.

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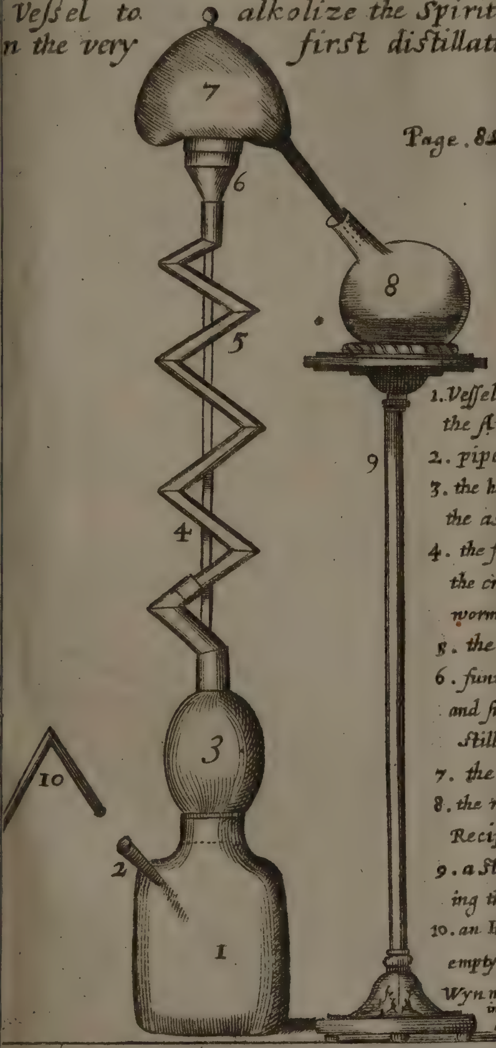
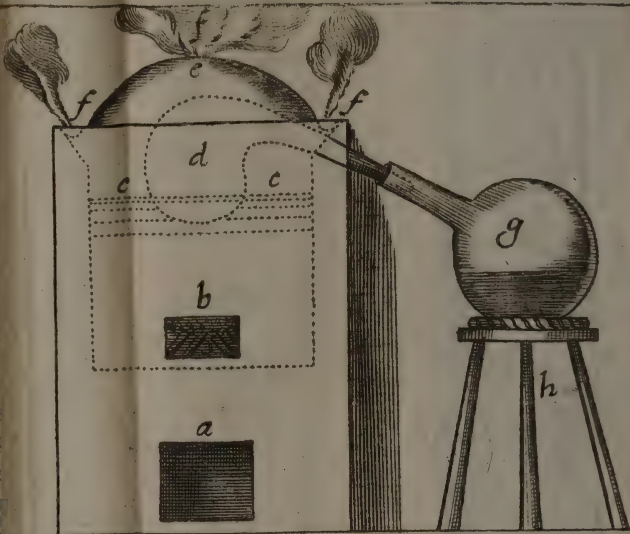
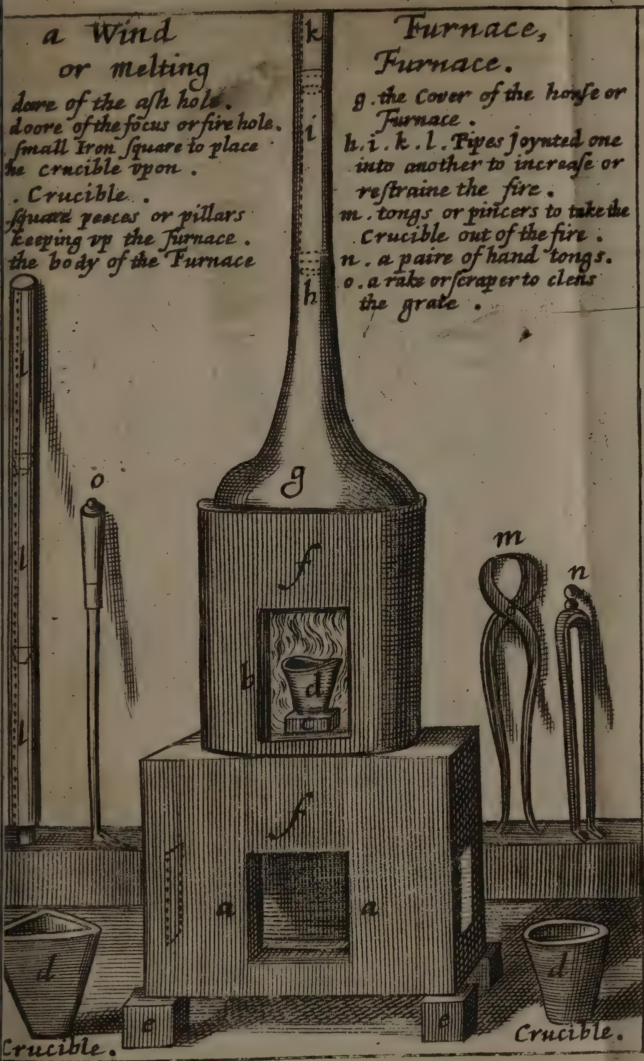


1. Veſsel receaving the Aqua Vitæ.
2. pipe to put it in.
3. the head receaving the ascending vapour.
4. the first peece of the crooked pipe or worme.
5. the second peece.
6. funnel receaving and ſupporting the ſtill head.
7. the ſtill head.
8. the receaver or Recipient.
9. a Stander ſupporting the ſame Recipient
10. an Inſtrument to empty the ſpirit of Wyn without interrupting the diſtillation called Siphon.



A Common Furnace for all operations, provided the veſsels be fitted and appropriated thereunto as we haue sayd in the Chapter of Furnaces

a. the aſhe hole.
b. the focus, or fire room with its grate.
c. iron barres supporting the Retort.
d. the Retort.
e. the cover of the Furnace.
f. the holes or Registers to ſuppreſs the fire.
g. the receavor or Recipiem.
h. the Stoole or threefoot table to ſupport the receivor.

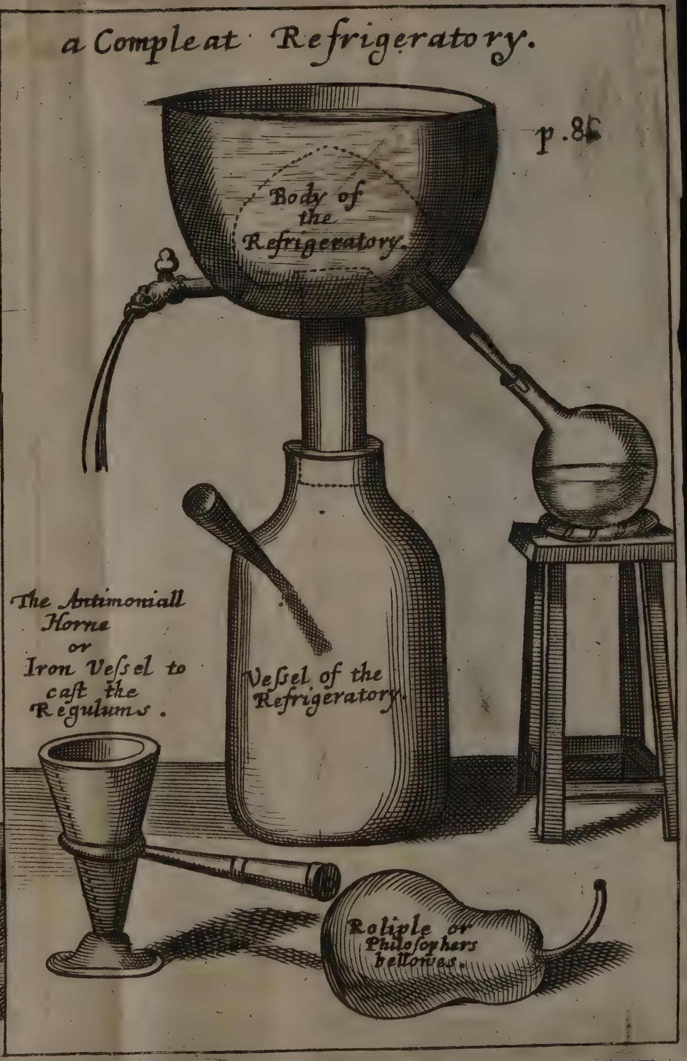


a Wind Furnace, or melting Furnace.

dore of the aſh hole.
doore of the focus or fire hole.
ſmall Iron ſquare to place
he crucible vpon.
. Crucible.
ſquare peeces or pillars
keeping vp the furnace.
the body of the Furnace

g. the Cover of the horſe or Furnace.
h. i. k. l. Pipes joynted one into another to increaſe or reſtraine the fire.
m. tongs or pincers to take the Crucible out of the fire.
n. a paire of hand tongs.
o. a rake or ſcraper to clens the grate.

k
i
h
l
l
l
o
g
f
b
d
f
a
a
e
e
m
n
d
Crucible.
d
Crucible.



a Compleat Refrigeratory.

Body of the Refrigeratory.
Veſsel of the Refrigeratory.
The Antimoniall Horne or Iron Veſsel to caſt the Regulums.
Roliple or Philoſophers bellowes.

p.8

condly; the Grate which receives and keeps up the Coals. Thirdly, the Chafing-diſh or *Focus* with its door to throw the Coals upon the Grate; wherein are the Regiſters, whereby the degrees of heat of the kindled Coals are ruled and moderated. Finally, the Shop or Laboratory, which muſt contain the Veſſels and matter upon which the work is intended. Theſe are the general heads upon which the matter and conſtruction of Furnaces is grounded; it followeth now, we ſhould ſay ſomething of their uſe, and the deſcription of their parts.

We begin by the Furnace commonly called an *ATHANOR*, which ſignifies a Furnace in *Arabick*, and hath this name given it by excellency, (the figure called by Orators *Antonomaſia*) becauſe this Furnace is not only the moſt uſeful of all others, to perform at the ſame time ſeveral Operations; but alſo becauſe it ſaves Coals, eaſeth the care and aſſiduity of the Artiſt, and yields a heat eaſie to be regulated. The *Athanor* is conſiſting of four parts: The firſt is the Turret, containing the Coals: The ſecond, a *Balneum Maris*: The third an Aſh: The fourth, a Sand-furnace. The Turret is to have four or five foot in height, 1½ foot ſquare in the outſide, and ten inches of empty ſpace or diameter in the inſide. It requires an Aſh-room, with its door for communicating the Air, and taking away the Aſhes, and a door above the Grate, to cleanſe it, and take away the earth and little ſtones which are ſometimes mingled with the Coals, and would ſtop the Grate, and hinder the paſſage of Air, and conſequently extinguiſh the Fire. This Turret alſo muſt have three open places, each half a foot high, and three inches broad in the three other ſides of the Furnace above the Grate, that the heat may by that paſſage be communicated to the *Balneum Maris*, Aſh and Sand-furnaces, which muſt be Contiguous to this Turret, and each of theſe muſt alſo have their Aſh-hole, Grate, and Door, to be (if occaſion requires) employed ſeverally by themſelves without the Turret: Theſe holes muſt be ſhut up, with Iron Plates, that are to riſe and fall, according to the degrees of fire to be given, to either of theſe Furnaces. To ſtop the top of the Turret, there may be fitted a round or ſquare braſs Kettle, which may be uſeful for ſeveral Operations, but ſpecially digeſtions: This Kettle or Cauldron ſhall be fitted, and joyn between two Iron bands, the one of which ſhall be even with the inſide of the Turret-top, and the other with the outſide, the ſpace between theſe two being filled with Aſhes to hinder the expiration of heat by the ſaid top; and thus the fire ſhall be forced to drive its heat to the ſides, drawn in by the Regiſters fitted to each of the three Furnaces. And ſo much ſhall ſuffice to give a ſhort explanation of the ſtructure and uſe of the *Athanor*: for as concerning the form and figure of it, the ingenuous Artiſt is left to his own liberty.

There is alſo a *Diſtillatory Furnace* requiſite in Chymical Operations, to which the Copper body, or *Veſica*, is faſtened for the diſtilling of *Aqua Vitæ* or Spirits of Wine, and for other hot Spirits, which are extracted by the help of fermentation; alſo for the extraction of diſtilled Oils, improperly called Eſſences, and after you have covered the ſaid body with its head, you muſt joyn to it a Fat or Barrel, with a ſtrait or crooked Pipe (called commonly a Worm) paſſing through the ſame, and receiving the vapours droven by the Fire, which are condenſed into Liquor in the Pipe, by the cold of Water wherewith the Fat is to be filled.

For thoſe that will operate upon Minerals and Metals, a *Furnace of Cementation* or trying-Furnace is required, which is nothing elſe but a Round of bricks of one foot diameter in the inſide, and eight or nine inches high; wherein, after the firſt row of bricks is ſet, which by a good Lute and fire-proof, muſt exactly be joyned and faſtened together, a hole muſt be left for the bellowes: This Furnace may alſo ſerve for Copell and Calcination.

A Laboratory cannot be accounted compleat, without a *Reverberatory Furnace* which is either cloſe or open; the cloſe is that in which, *Aqua Fortis*, and ſpirits of Salts, as Nitre, Vitriol, common Salt, and other things of like nature, may be diſtilled; the Open, is that which is uſed for Reverberation and Calcination, by the help of the flame refracted from the backſide to the mouth of the Furnace, drawn in by a gap of half an inch broad, and of the length of the whole Furnace, left behind the Iron Plate, which contains the matter to be reverberated; and the ſame flame ſo reflected, goes out by another gap of the ſame dimenſion, left in the fore-front of the Furnace at the top, immediately under its Cover, which ought to be made flat without any Regiſter, except the ſame gap left open before.

Finally, to compleat all, the Artiſt muſt have his *Winde-furnace*, for Mineral and Metallick fuſions, Vitrifications, and preparing of *Regula's*; the Grate thereof muſt be placed upon a Square, born by four Pillars only, that the winde and air may have a free admiſſion, and ſo may be inſtead of bellowes; the opening between each Pillar of about a foot; and upon this baſis, a round Turret of about fifteen inches high, and eight inches diameter in the inſide, ſhall be built; the door for paſſage of the Crucibles that are to be put in, muſt be ſeven or eight inches broad, and ten inches high: upon this Turret muſt be applyed a Cover of an Elliptical figure, or Arch-wiſe, with a Channel above bored with a hole of about three inches diameter, upon which another ſhall be adapted, three or four foot high, that the action of fire may better concentrate about the Crucible, or other Veſſels containing the matter to be melted; the mouth of the door, by which Crucibles are put in, Crucibles muſt alſo be ſtopt, with a door of good Clay, made of three pieces.

But becauſe Chymical Artiſts are not ſtill ſedentary, and ſo cannot be furniſhed, where they have occaſion to work, with all ſort of Furnaces, I will here impart a way how to erect one, which may ſucceſſively be employed in all Operations requiſite to this Art; provided the Artiſt may be furniſhed with neceſſary Veſſels, and of ſuitable dimenſions to the Furnace, which I will now deſcribe.

Build a Furnace of 1½ foot ſquare, make the bottom of the Aſh-room with a brick laid flat, and continue to raiſe the wall with two bricks, and leave the empty place in the middle, with the door before of four inches height, which are two bricks; then cover the door with a brick, and compleat the ſquare with the ſame height: after this ſet a Grate conſiſting of ſeven Iron bars, of the thickneſs of the thumb, ſquarely wrought: theſe bars muſt be laid upon their edge, that the aſhes may the eaſlier fall therough, and not ſuffocate the fire; the diſtance between each muſt be of the fore-fingers breadth: and having thus placed them, and fitted their equal diſtance with Tyles broken, or ſtones of the ſame dimenſion and thickneſs, and luted all very well together; you muſt begin to build in a falling wall, leaving only ſix inches of your Grate open, and leſſening every lay of bricks of about three lines, which work is to be continued till you have brought it to be about ten inches high, which ſpace is neceſſary, as much to contain the Coals, as to leave a play ſufficient for the fire; you muſt leave here a door alſo of the ſame dimenſion as the Aſh-room; this ended, place two Iron bars of an inch thick, diſtant half a foot one from the other, and then eaven the wall either with ſtone, or ſome other matter of a fit thickneſs, and then build round three bricks edge-wiſe, that you may have the more room, to put the neceſſary Veſſels for the following Operations.

If you will work with the *Balneum Maris*, take a Kettle or round Cauldron of an equal diameter with the inſide of your Furnace, and of one foot height onely, that it may the better be adapted to the Furnace, and the ſpace remaining at the corners of the ſquare, will be inſtead of Regiſters to draw, and enliven or remit the heat, according as there ſhall be occaſion. You muſt alſo have another Cauldron, with a good ſtrong bottom of Iron plate, but thinner in the ſides, made fit to be adapted to the ſame Furnace; and this will ſerve for diſtillations, and for works that require a heat either of Aſhes, Sand, or filings of Iron; and if this Iron Veſſel was made of Mettle of a Breaſt-armour Plate, and forged all of one piece, it would alſo ſerve for a *Balneum Maris*.

And if you will work with a Retort, you may put an Earthen Pot Cover, turned upſidewards, upon the Grate; and fill the hollow of it with ſand, to be inſtead of a Lute, and hinder the breaking of the Veſſel, and the too quick action of the fire upon it and the contained matter; of which you have no more to do, then to cover the top of the Furnace with an Earthen Pan not leaded, and bored with a hole in the middle, that this hole with the other four angles may be inſtead of a Regiſter to direct the fire.

If the Artiſt deſires to make uſe of this Furnace; towards Fuſion, Calcination, Cementation, or Reverberation, he may do it alſo, having taken away the bricks, builded edge-wiſe on the ſide-top of the Furnace, as the bars alſo, to put in his matter more eaſily and readily.

Thus much we had to ſay of Furnaces built with Lute and Bricks: there remains only now, to ſpeak ſomething of the *Lamp-Furnace*, uſed by the moſt curious Artiſts for many Chymical Operations. This Furnace muſt be made of a good *Bolus* and well compacted Clay, kneaded and well allayed together, and then well baked, that the heat of the Lamp may not tranſpire; and to hinder it the better, the Furnace may after baking be rubb'd and anointed within and without, with white of Eggs reduced to Liquor by a continual agitation.

This Furnace is to conſiſt of three pieces, making in all 21 inches in height, of an inch thickneſs, and eight inches diameter in the inſide. The firſt piece, which is the baſis of the Furnace, muſt be eight inches high, with a hole of $4\frac{1}{2}$ diameter below, that by this opening the Lamp may be put in, whoſe diameter is to conſiſt of three inches, and the depth or concavity of two: it muſt be round, and covered with an Iron plate, bored in the middle with a ſufficient hole to contain a link of 12 threds or more, and with ſix other holes round about, proportioned in an equal diſtance from that of the middle. The ſecond piece is to be of ſeven inches height, and fitted and adapted to the firſt, having four earthen jets or handles of about an inch long, ſpringing out of the Wall-work, to hold up an Earthen or Braſs Veſſel of ſix inches diameter, and four high, to make a *Balneum Maris*, or a *Capſula* for aſhes or ſand, as occaſion requires. There muſt alſo be in this ſecond piece or part of the Furnace two holes oppoſite the one to the other, of 1½ inch diameter, fitted with two Glaſſes of *Venice* Cryſtal: theſe two holes muſt be made between the heighth of the fourth and laſt inch of the height, to be inſtead of windows, to diſcover thereby the better the various colours, in the Operations and Diſſolutions made by the Artiſt, oppoſing a lighted Candle to the ſide you are to look in the Veſſel in which the matter is contained, lying interpoſed. The third piece or part of the Furnace muſt be ſix inches high to compleat the total height of 21. made arch-wiſe, or hemiſpherical, and bored on the top with a hole of an inch diameter, receiving ſeveral pieces of three lines apiece, growing ſtill narrower till they end in a pyramidal knob which ſhall cloſe up the laſt: There muſt alſo be four other like holes made between the height of three or four inches, equally diſtant one from the other: theſe holes are inſtead of Regiſters to the Lamp-furnace, whoſe heat is alſo partly governed by the encreaſing or relenting, which the approach or removal of the flame in the Lamp doth cauſe, (whoſe ſupport muſt be made with a round piece of Wood, faſtened or applyed to a skrew, whereby it ſhall be raiſed or depreſſed at the will of the Artiſt,) as alſo by putting more or leſs wieks to burn in the Lamps; and augmenting or leſſening the number of threds in the wieks, the heat is multiplyed or leſſened, according to the nature of the Operations. But he that will proceed with more nicety in obſerving the exact degrees of heat, muſt have recourſe to the *Thermometer* (commonly called *A Weather-glaſs*) wherein the water incloſed, doth by its raiſing and depreſſing, exactly ſhew the degrees of heat. The Oil which is to be imployed for the feeding of this Lamp, may be rectified upon fixt Salts made by Calcination, that they may yield leſs Soot, and diſplay their action more vigorouſly, ſince that rectification takes away their excrementitious humour and ſuperfluity. The wieks muſt be made of Gold, *Alumen plumæ*, or *Amiantho's*, which is a Mineral found in the Iſland of *Elba*: to which in caſe of neceſſity may be ſubſtituted the Marrow or ſoft Cotton found in the middle of Elder, or Reed, very well dryed; and this muſt be changed freſh every 24 hours: for which cauſe it is neceſſary to be provided with two Lamps, to ſucceed one the other, that no intermiſſion may interrupt the action of heat. If you make uſe of the marrow or heart of Elder, there muſt be

a

a little ſharp piece of Iron, or a Wyer ſharpened, fixt and ſodded in the bottom of the Lamp, that may anſwer the middle hole of the Cover which is to contain the wick.

The figures of all theſe ſeveral Furnaces are exhibited in the Cut, following this Chapter. We add only two words concerning the Inſtruments neceſſary to the managing of the Furnaces, as Pincers and Tongs to take away the Crucibles, a crooked Scraper to cleanſe the Grates, an Iron Shovel to take the aſhes away: There muſt alſo be an Iron Conical and hollow Veſſel, well ſodded and ſtaunch, for projecting the *Regula*'s, the Model whereof may be taken in the figures of Glaſs Veſſels.

CHAP. V.

Of Lutation.

HAving deſcribed the variety of Veſſels, and their uſe, as alſo the diverſity of Furnaces, it followeth we ſhould ſpeak of all the kinds of Lutations, both of Lutes belonging to the fabrication of Furnaces, as of that which is uſed for the preſervation of Veſſels, and to repair their cracks and fractures, as alſo to joyn them again together.

That Lute which is fitteſt for the conſtruction of Furnaces, is to be made with red Clay: not too fat, leſt it be ſubject to chinks; nor too lean or ſandy, leſt it bind not enough. This Clay muſt be wrought in water, wherein ſtore of Horſe-dung and Chimney-ſoot hath been ſteept and well mingled, by which a Salt is communicated to the water, binding the Clay, and making it fit to abide the fire. But if you will make uſe of this kind of Lute or Clay, to arm, or ſpread about the Glaſs or Earthen Veſſels, which are expoſed to the open Fire, you muſt add common Salt, or the *Caput mortuum* of *Aqua Fortis*, beaten or grinded Glaſs, and ſcales of Iron falling from the Anvil in Smiths Forges; and you ſhall have a Lute ſo reſiſting to the action of Fire, that it will be impenetrable to vapours, inſomuch as it will ſerve inſtead of the Retorts when the length and violence of flaming Fire, which is uſually given at the end of Mineral Operations, hath melted the Glaſſen ones.

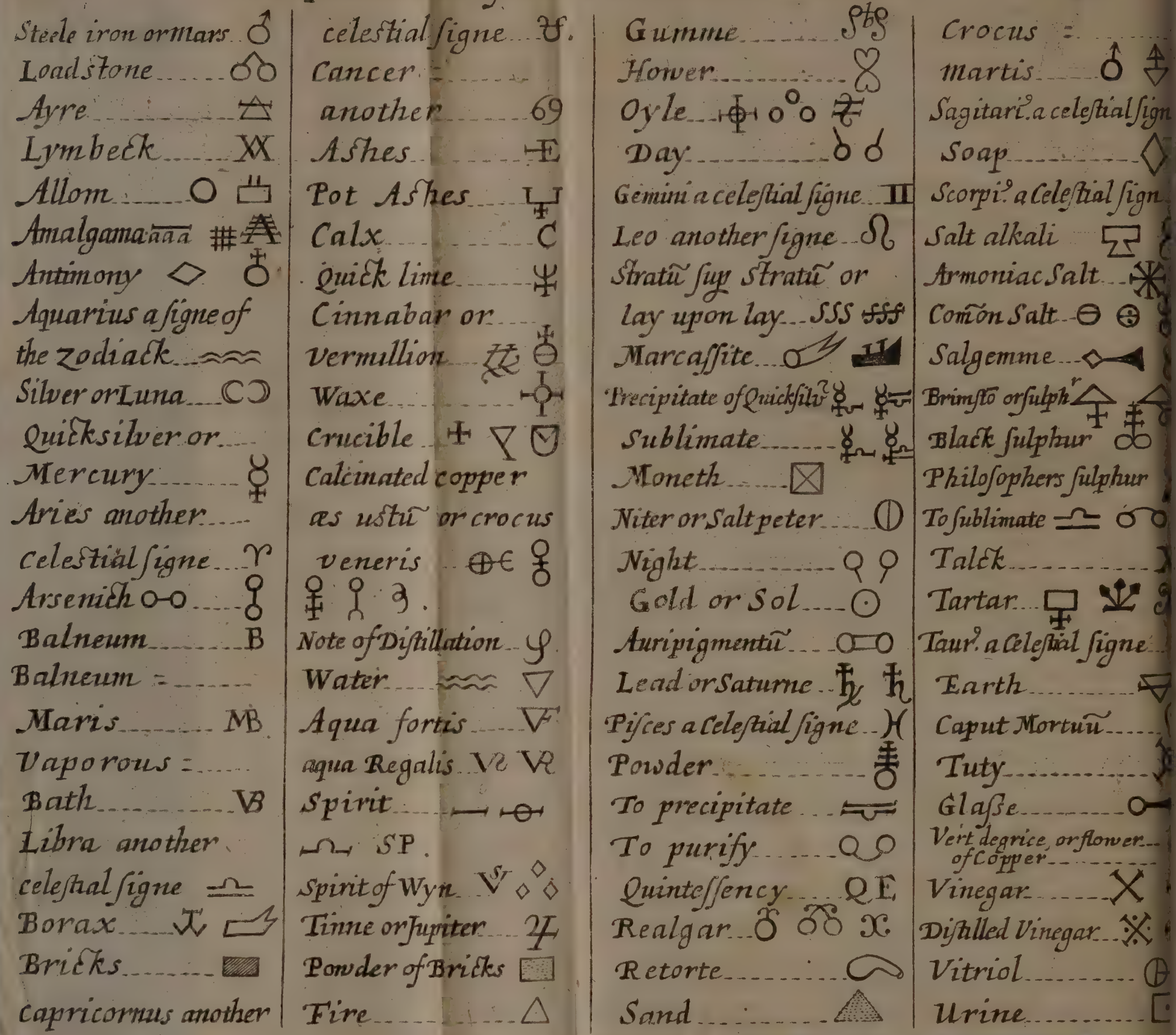
When we have ſpoken of Veſſels, we have mentioned ſome that ought to be joyned together for one Operation, and ſaid that it is neceſſary, when the ſubſtances wrought upon are ſubtile, penetrating and æthereal, that their meeting may be very exactly luted. There are then three kinds of Lute obſervable, for the joyning of Veſſels together, when they are not expoſed to open fire. The firſt is, that Lute which is made with white of Eggs, beaten and reduced to water by a long agitation: therein dip Fillets of Linnen, and ſpread the powder of unſlackt Lime ſubtily beaten, then add another fillet of dipt Linnen, and ſpread powder again, and ſo continue and reiterate this three times; but note, that the Lime powder muſt never be mingled with the water of Eggs, becauſe the ſecret fire of the Lime would burn and harden it, though many Artiſts do fall into this error; you may alſo dip in the ſame Whites of Eggs, Swine or Ox Bladder, without making uſe of the Lime, principally in the rectification and alkoholiſation of fiery Spirits, extracted out of fermented ſubſtances. The ſecond kind of Lute is made with white Starch or baked Flower, and made into Pap with common water: this kind of Lute ſuffices for luting Veſſels which contain leſs ſubtile and penetrating ſubſtances. The third, is nothing elſe but Paper cut in Fillets, folded and dipt in water, applyed to the top of *Cucurbites*, both to hinder that the head may not offend it, and prevent the exhaling of vapours. This manner of Lute is only uſed in evaporating and drawing of ſome inconſiderable *Menſtruum* or of ſmall worth, and which may not ſerve again for another Operation.

There muſt alſo be another kind of ſtrong Lute, made to remedy the cracking of Veſſels, and joyn them together, when they are to ſuffer a violent heat; of this there is two ſorts. The firſt made with Glaſs reduced to very ſubtile powder, *Karabe* or yellow Amber and Borax, allayed with the Mucilage or water wherein Gum Arabick hath been ſteept, and ſo applyed to the joynts or meeting of the Veſſels or their Cracks: and after it is well dryed, you muſt run with a red hot Iron gently over it, and it will give it a faſt ſodering and almoſt perfect union of the chinks or cracks of the Veſſels together: But if you will ſpare ſo much trouble, make your lute only with ſoft Cheeſe, Lime and Rye flower; and you ſhall find it no leſs ſucceſsful for this purpoſe by experience. But if you will cloſe the neck of a Retort, and fit it to its Recipient, for the diſtilling of *Aqua Fortis* and Spirits of Salts, uſe only common Clay, and the *Caput Mortuum* of Vitriol or *Aqua Fortis*, and common Salt, diſſolving the Salt in water, and mixing well your Lute, then applying to the place, give it time to dry with a ſlow heat, to avoid chinks; which if any happen, your care muſt be to ſtop them leaſurely as they are made, and hinder thereby the exhaling of volatile Spirits.

To all theſe kind of Lutations may very well be added the *Hermetical Seal*, which is nothing elſe but the melting of the Glaſs in the neck of the Veſſel, to which end the Artiſt is to give by degrees the heat of Fuſion; and when you ſee the neck begin to yield and encline by the force of fire melting the Glaſs, with ſtrong Cizzers ready for the purpoſe, you muſt cut the neck of the Veſſel where it is moſt melted; and thus the parts compreſſed, do as it were unite the edges of the Glaſs inſeparably: But if you would rather cloſe or ſeal the Veſſel in a ſharp end, twiſting, by degrees the neck of the Veſſel, you muſt after expoſe the ſmall end to the flame of a Candle or Lamp, to frame thereby a little knob, wherewith that ſmall hole may be ſtopt, which moſt commonly remains at the end of the twiſting, and is almoſt imperceptible.

Now as the Veſſels are not ſtill framed according to our deſire, and that ſome parts are often to be taken away, which may hinder the Operations; we muſt alſo declare, how this, without endangering the Veſſel may be done, *viz.* by breaking or ſlitting the Glaſs equally by a thwart line: This is performed three ſeveral ways; as either by applying a red hot Iron to begin the ſlit, or twiſting about the neck of the Veſſel three rows of thred dipt in Brimſtone, if it be ſtrong and thick; or elſe turning the Veſſels part you would ſlit to the flame of a Lamp or Candle, if it be a thin and ſmall Glaſs; and when it is well heated by any of theſe three ways, wipe it off, and throw upon it ſome drops of cold water, which will cauſe a Crack; the which begun, you may continue at your will, and draw where you pleaſe to the very end with a lighted Match, blowing upon the Coal or lighted part of it as you go along, to heat the Glaſs, and this way you ſhall never run danger of loſing your Veſſels.

Explanation of the Chimical Characters



Steele iron or Mars	♂
Loadstone	♂♂
Ayre	🜁
Lymbeck	XX
Allom	○ ⊔
Amalgama āāā	⋕ Ā
Antimony	◇ ♁
Aquarius a signe of the zodiack	≈
Silver or Luna	☾ ☽
Quicksilver or Mercury	☿
Aries another celestial signe	♈
Arsenick o-o	🜺
Balneum	B
Balneum Maris	MB
Vaporous Bath	VB
Libra another celestial signe	♎
Borax	⅄ ⏢
Bricks	▨
Capricornus another celestial signe	♑
Cancer another	69
Ashes	🝗
Pot Ashes	🝘
Calx	C
Quick lime	🝁
Cinnabar or Vermillion	🜓 ♁
Waxe	🝊
Crucible	🝥 ▽ ⛉
Calcinated copper æs ustū or crocus veneris	⊕€ ♀ ♀ ♀ ∂.
Note of Distillation	℘.
Water	≈ ▽
Aqua fortis	🜅
aqua Regalis	VR VR
Spirit	⊸ ⊖ ⏜ SP.
Spirit of Wyn	🜇 ◇◇◇
Tinne or Jupiter	♃
Powder of Bricks	⬚
Fire	△
Gumme	🝚
Flower	∞
Oyle	🝆 ∘°∘ ₮
Day	δ δ
Gemini a celestial signe	II
Leo another signe	♌
Stratū sup. Stratū or lay upon lay	SSS 🝜
Marcassite	⚲ ▙
Precipitate of Quicksilv.	☿ ☿
Sublimate	☿ ☿
Moneth	⊠
Niter or Salt peter	🜕
Night	⚲ ⚲
Gold or Sol	☉
Auripigmentū	o═o
Lead or Saturne	♄ ♄
Pisces a Celestial signe	♓
Powder	🝨
To precipitate	⥤
To purify	∞
Quintessency	QE
Realgar	♂ ♂♂ ✗
Retorte	🝭
Sand	◭
Crocus martis	♂ ⬘
Sagitari. a celestial sign	
Soap	◇
Scorpi. a Celestial sign	
Salt alkali	⊤
Armoniac Salt	✳
Comon Salt	⊖ ⊕
Salgemme	◇⊸
Brimsto or sulph.	🜍
Black sulphur	🜏
Philosophers sulphur	
To sublimate	≏ ♂
Talck	
Tartar	🜿 ♆
Taur. a Celestial signe	
Earth	🜃
Caput Mortuū	
Tuty	
Glasse	o—
Vert degrice, or flower of Copper	
Vinegar	✕
Distilled Vinegar	⋇
Vitriol	⊕
Urine	⊡

CHAP. VI.

Of the Characters and Terms uſed by Chymical *Authors.*

AS the ancient were wont to conceal under ſhadows and obſcurities the ſecret myſteries of Nature, for fear the ignorant Vulgar ſhould prophane Sacred Philoſophy; ſo *Hermetical Philoſophers*, which are *Chymiſts*, have uſed the ſame caution, to prevent their Doctrine from growing too common, and the prophaning of her admirable myſteries: For this reaſon have they made uſe of Hieroglyphical Characters, as alſo terms of Art not in uſe amongſt others, to expreſs ſeveral things which do concern the Eſſence of it, in the Practical or Theorical part: And for this cauſe have we thought neceſſary to explain, as much as in us ſhall be, the ſignification of thoſe abſtruſe and obſcure terms, that when curious Artiſts ſhall find them in Authors either Ancient or Modern, they may receive thereby no diſtaſte nor ſtop to their purpoſes: being confident, that what we ſay, ſhall ſuffice and give light enough, even to the youngeſt Chymiſts, to introduce them into the right underſtanding of all the Books treating of this noble part of Philoſophy.

Hermetical Philoſophers, beſides theſe characters, involve their Doctrine under ſeveral obſcure terms, which ſeem ſomething ſtrange to the Novices of this Art, wherefore we will give a ſhort explanation of ſome few of the moſt abſtruſe ſort, whereby the others may receive an eaſier light. So they have called *Lili*, the matter by them uſed for ſome excellent Tincture, whether Antimony, or any other: *Aqua Fortis*, the *Oſtridge's ſtomack*: Armoniack Salt ſublimated, *the ſpread Eagle*: The Tincture of Gold, *the red Lion*: That of Vitriol, *the Green Lion*: The Mercury ſublimated, corroſive, and Antimony, are their *two Dragons*; the Butter of Antimony, the poyſonous Foam of the *two Dragons*: The Tincture of Antimony, *the Dragons Blood*; and when this Tincture is coagulated, they have called it, *the Wolfs Jelley*. They alſo name that redneſs, which in the diſtillation of Nitre appears in the Receiver, *the Blood of Salamander*. The Vine is called by them, the Great Vegetable; Tartar, the Excrement of the Juice of *Janus's* Plant: And ſo have they ſeveral other names, more or leſs Enigmatical, which we will not gather up here; partly becauſe it might prove both tedious and needleſs; as alſo that by aſſiduous reading and practice, (which are the two beſt Clues to lead us out of this labyrinth) they may eaſily be conceived and underſtood. Thus ſhall we with this Chapter put a concluſion to this Book, to enter into the ſecond of our Second Part, wherein we ſhall give a free and ingenuous deſcription of the manner of working, and preparing remedies, as alſo of the excellent uſes, to which they may be applyed.

THE

The Second Book
OF
The Second Part.

Treating of Chymical Operations.

Chap. I.

Of ſuch Obſervations as are neceſſary for Separating and Purifying the firſt Five Subſtances, after they are drawn from the Mixts.

FIRE is a potent agent, and an equivocal cauſe, which eaſily drives upwards, evaporable, ſublimeable, and volatile Subſtances, ſuch as are Phlegm, Spirit and Oil. Phlegm, or the wateriſh part; becauſe it ſticks not very much to the other Principles, doth aſcend the firſt; and for this reaſon, there is but need of a ſlow fire to extract it, whereas for the Oil a ſtronger is required, by reaſon of its clammineſs and viſcoſity, and its union with the Salt; and for the Spirit, it requires yet a more violent fire, by reaſon of its waight, Spirits being nothing elſe but open Salts, as Salts exchangeably nothing but cloſed and compacted Spirits. Sometimes the Phlegm, Oil, and Spirit, do confuſedly aſcend with much Salt, by the great violence and vehemency of Fire, and ſometime much of the Earth is alſo ſublimated with theſe Subſtances; as it may evidently appear in the Soot of Chimneys, from which the ſeparation of the five Subſtances may eaſily be made.

The Phlegm then, which is the firſt aſcending, may be ſeparated with the heat of a luke-warm Bath, or ſome other analogal heat; it may be ſevered from the Oil, by the Funnel, becauſe it ſwims above: but from the Spirit it muſt be ſeparated by the heat of *Balneum maris*, or ſome ſuch like: for, that heat is capable to elevate the Phlegm, but cannot drive upwards the Spirit by reaſon of its waight; to that ſublimation a ſtronger fire is required, as that of aſhes, ſand or filings, or ſome quicker heat, according to the nature of the Spirit.

The Salt and Earth are not very ſtrictly united, wherefore they may eaſily be ſeparated by the help of ſome aqueous liquor, which is the fitteſt *Menſtruum* to diſſolve Salts, and ſeparate them from the Earth: and as the Earth by its nature is indiſſoluble, it precipitates it ſelf into the bottom by its own weight: The Salt being thus ſeparated, the Lye muſt be filtrated, and the *Menſtruum* evaporated in Glaſſen Veſſels, White-Earth, or Jugge-metal till it skins, then expoſe them to the cold to make it ſhute into Chryſtals, and ſo incloſe it in Glaſſen Veſſels well ſtopt, to hinder their melting, by the attraction of the moiſture of the Air.

But you are to note, that the fiery, or hot Spirits, drawn from fermented Subſtances, are lighter yet then the Phlegm, and ſo aſcend the firſt in their diſtillation or rectification. A very familiar and remarkable example is obvious in the making of Wine: for, if you take it to diſtil in the Muſt before it hath fermented, nothing but Phlegm will aſcend, and the Spirit ſhall remain, joyned and incorporated with the eſſential ſalt of liquor, which ſhall thicken into an extract very ſweet and pleaſant: But, if you ſtay your Diſtillation after the Fermentation is perfected in the Cellar, you ſhall draw firſt the hot burning Spirit, which the Phlegm ſhall follow, and in the bottom nothing ſhall remain, but an ungrateful and unſavoury extract, becauſe the eſſential Salt of the Muſt, hath been volatilized into Spirit by the action of the fermentation.

The difference of Veſſels and ſeveral degrees of Fire, are alſo very uſeful to ſeparate and joyn again theſe ſeveral ſubſtances, after they have ſeparated aſſunder: for the bond of their union being once broken, each takes its place by it ſelf; but the fire intervening, reduces all into vapours and exhalations, which according to the diverſity of

Subſtances are received by the Artiſt in ſeveral Veſſels. Thus is the Spirit eaſily ſeparated from the Oil by the funnel, whether it ſwims on the top, as the Oils of Flowers and Seeds are uſed to do; or whether it ſinks in the bottom, as doth the Oil extracted from aromatick Subſtances and Woods. But nothing but a great and violent heat can ſeparate the Salt from the Spirit, by reaſon of the great ſympathy they have together; when it is noted, that Salts muſt be made uſe of in the fixing of Spirits, and Spirits reciprocally to volatilize Salts.

From what we have already ſaid above, every one may of himſelf make ſeveral fine reflections and conſiderations, touching the diſtillation of Mixts abounding in Salt, Spirit, or Oil, or any other mediane Subſtance between theſe three. But it muſt be noted, in general, that Animals and their parts require in the operations made upon them, only a very ſlow heat, becauſe they are compounded of a very Volatile Oil and Spirit; and that Vegetables and their parts need a heat of a more exalted degree, according to their more or leſs affixation; but Minerals, and chiefly all the family of Salts, require the greateſt and intenſeſt heat.

When the Oils and Spirits aſcend with the other Subſtances confuſedly together, they muſt be rectified, that is to ſay, purified by a re-iterated diſtillation. But a ſlow and gentle fire draws eaſily away, and ſeparates aſunder the Phlegm and the Salt: the Salt hides himſelf in the bottom of the Earth, and forſakes it not till the Spirit and Oil be ſeparated by augmentation of fire, which by the violence of its action diſunites finally the compound, and that done, there muſt be water poured upon the Earth (commonly and improperly enough called the *Caput mortuum*) to diſſolve and ſeparate the Salt: which done, you are to evaporate the *Menſtruum*, and in the bottom of the Veſſel, you ſhall find a tranſparent and Cryſtalline Salt, if the Salt be an Eſſential Salt which followeth ſtill the nature of Niter, provided you leave a portion of Phlegm, that the Cryſtals may ſhoot therein: but, if the Salt be an *Alkali* made by Calcination, you muſt evaporate Phlegm dry, and you ſhall find the Salt in the bottom in the form of an opacous and friable ſtone.

All theſe Obſervations are very neceſſary to be noted in the practical part, becauſe oftentimes the Artiſt hath need but of one of theſe Subſtances ſeparated from the others: therefore he muſt be skilful in ſeparating the one from the other according to his preſent occaſion, becauſe the deſired and lookt for operation is often miſſed, and impeded by a connexion of the aſſociated principles, when they are yet joyned one to another: for one part of the Mixt may be aſtringent and coagulating, when the other ſhall be inciſive and aſtringent, according to the variety of principles that compound the ſame: and theſe parts ſo joyned together, are hurtful, and contrary one to the other, ſo that when you intend to diſſolve, you muſt know, and be capable to ſeparate the diſſolving principle by it ſelf, as you muſt reciprocally take the coagulating principle to coagulate.

The firſt Diſtillations are ever tainted with ſome impurities, and for the moſt part have a touch and ſavour of *Empyreuma*, chiefly thoſe that without addion of any *Menſtruum*, are made with the heat of a violent fire: as the Oils drawn by a retort, which are thick and filled with ſome portion of the Volatile Salt of the Mixt, and ſometimes of the fixt Salt driven up by the extreme action of fire. Therefore an Artiſt muſt be skilled in ſeparating theſe different parts; for, if the extracted Oil be filled with theſe impurities, or hath acquired an Empyreumatical odour, it muſt be rectified upon *Alkalis*, ſuch as are Tartar, or Vine-aſhes, or aſhes of any Wood; for, the ſympathy which is between Salts, will cauſe them to joyn together; or to ſpeak more Philoſophically, the fixt Salts will kill the volatile by their action, they being commonly ſharp and acid, and ſo ſhall the Oil aſcend clear, ſubtile, defecated, and without that ſmoaky Odour which the Volatile Salt carrys along with it, as a kind of ſmoak: And if the firſt Rectification be not ſufficient, it ſhall be reiterated upon other Salts, or upon that which hath already been uſed, provided it be before hand made red hot in a Crucible, to take away from it, that ill odour and impurity which it had contracted in the firſt Rectification.

The impurities of Spirits muſt be ſeparated by rectifying them upon Earths deprived of all Salt, or upon Aſhes, whoſe Salt ſhall be waſht away by Lyes: becauſe, if you did rectifie them, upon bodies that were impregnated with any Salt, the Salt ſhould fix and keep to it ſelf ſome part of the Spirit; or, if the Spirit was ſtronger, it would Volatilize the Salt, and carry it along with it by Sublimation, becauſe of their mutual ſympathy which binds and unites them very ſtrictly together.

Thoſe that have been ignorant of this doctrine of Action, Re-action, and the ſeveral Fermentations incident to Chymiſtry, by the means and mixture of Salts and Spirits, have groſly erred and committed irreparable faults, as it may be obſerved in the reading of Chymical Practitioners.

Volatile Salts may be purified by diſſolving them in their own Spirits, after which they muſt be filtrated to ſeparate their heterogeneous Subſtances, and then drive them through low Cucurbites or Retorts with a wide neck : and thus ſhall two Operations be performed at once, by rectifying the Spirit, and ſubliming the Volatile Salt, which is nothing elſe but a coagulated Spirit, or a mean ſubſtance between Salts and Spirits, by the mixture of a ſmall portion of internal Sulphur of the Mixt whence it is extracted.

Concerning Eſſential Salts, ſuch as thoſe which are extracted out of green and juycy Plants, where Nitre or Tartar are predominant, which contain in themſelves the principles in which reſides the Eſſence and chief virtue of the Mixt, they muſt be purified either with diſtilled Rain-water, or the water diſtilled from the juices of the ſame Plants; then percolate thoſe diſſolutions through common Aſhes, or ſuch as will be made, by calcining the Cakes of the Plants remaining after the juice is drawn : that it may be inſtead as it were of a filtration, to remove the terreſtriety and clammineſs, which might hinder the Cryſtallizing of the Salts; then evaporate what is percolated to a fourth part of the whole, and expoſe it in a Veſſel in the cold, that the ſaline ſubſtance contained in the liquor may ſhoot in Cryſtals.

As for the Salts, *Alkali* or Fixt; made by Calcination, they muſt be purified by Reverberating the Aſhes, until they become gray or whitiſh, them make a Lye thereof, filtrate it, and evaporate, till it be dry; and if it be the Salt of any Plant diſtilled, reiterate the diſſolution of that firſt Salt in the proper water of that Plant, that the Spiritual and Eſſential Salt of that Plant which is in the water, may joyn with the fixt Salt, which ſhall be as a *Magus* to it, and encreaſe its vertue; as alſo it will hinder the ſaid Salt from melting ſo eaſily when expoſed to the open Air, as it would otherwiſe; the Salt having been thus prepared, muſt be expoſed in the cold to Cryſtallize, after evaporation hath been made, till a skin covers the liquor: but if it be a Lye only, it muſt be evaporated, till it be dry, having firſt been filtrated.

From all that is ſaid above, it may eaſily be conceived, that no labour nor care is to be ſpared, to ſeparate and purifie all theſe divers Subſtances, ſince it is abſolutely neceſſary; leſt the one ſhould prove oppoſite and contrary to the other, and ſo hinder the uſe and Operations of our moſt Noble Remedies, according to the true Indications of Phyſick; for theſe Subſtances being joyned yet together, do often more hurt and prejudice then they do ſervice: and this mixture doth hinder, that the Preparation doth not operate (as we do intend) according to the extent of the Salts vertue, or of the Oil and Spirit, becauſe the faculty and vertue of one of theſe things is blunted and depreſſed, by the Viſcoſity or the drought of the other. And all theſe general hints and directions may be applyed to all Chymical Preparations, which are not only made upon Animals and Vegetables, but alſo upon Minerals; and as much for thoſe that work upon Metals, as for thoſe which only ſeek Remedies for the ennobling of Phyſick; or ſuch as only work for ſatisfaction of their Curioſity, and the trial and examination of Phyſical Truths.

CHAP. II.

An Apology in the behalf of Chymical Remedies.

I Thought it neceſſary to vindicate the Profeſſors of this noble Art, from the calumnies and aſperſions which ignorant perſons do caſt upon it, before I come to deſcribe the Preparations of thoſe Remedies which are uſed by true Phyſitians; to arm with Reaſons and defenſive Arguments the Lovers of this Science, againſt the weakneſs of their Adverſaries. I ſay, that theſe deſpiſers of Chymiſts, and haters of Chymiſtry, are ignorant; becauſe not only unacquainted with the true Preparation and Effects of theſe Remedies; but moreover ignorant in the knowledge of Nature and its Operations, which only can be diſcovered by thoſe that work upon natural Products, and do exactly and curiouſly Anatomize all the parts which they contain in particular.

But before we come to quote the reaſons of both parties, *Chymiſts* and *Galeniſts*, in the controverſie between them; we muſt before all things, find a competent and capable Judge to decide the Queſtion: that is to ſay, a Judge that may be throughly acquainted with their Opinions. For it would not be poſſible for a *Galeniſt*, to blame and lawfully refute the Theory and Practiſe of Chymiſtry, unleſs he be fully acquainted with their doctrine.

But, that no body may be ſcandalized at our Diſcourſe, you muſt know, that there is a great difference between the *Galeniſts* and the Doctrine of *Galen*; and that Chymiſtry doth not undervalue this Author, knowing very well, with what deſire he was poſſeſt to attain to the knowledge of this Art, having with great avidity and longing ſought for that Art, which ſhould teach him how to ſeparate the ſeveral Subſtances, of which Mixts are compoſed. But many at this day do profeſs, and take upon themſelves the name of *Galeniſts*, which never were acquainted with his works; and boaſtingly pretend to follow the Doctrine of *Hippocrates*, which never did examine his practiſe. We muſt then call *Galeniſts* thoſe which are only Phyſitians by name, and who after they have peruſed ſome Univerſity Writings, which do perſwade them, that, Phyſick is nothing elſe but an art of diſcerning heat and cold, immediately take upon themſelves the practice, and fill their diſcourſes with nothing elſe but notions of Heat and Cold; and all their skill tends to ſpeak upon the more or leſs of theſe qualities. But the learned *Fernelius*, who was the Ornament of his Age, doth confeſs and evidence, after having acknowledged this Error, that beſides theſe firſt qualities, there are many other vertues hidden in the Mixts, as it evidently doth appear towards the end of his ſecond Book, *De abditis Rerum Cauſis*, where he teaches how the Seminal Vertue contained in compounds, and which really is the ſeat of all their activity, muſt be extracted.

We muſt then take for judge of this Controverſie *Peripatetick Philoſophy*, provided it be ſeaſoned with the noble knowledge both of *Galenical* and *Chymical Phyſick*, that none may be judge, and party in the ſame caſe; to this end, all prejudices which might be entertained concerning either of theſe Arts, muſt be laid aſide, and ſubmitted to the trial of Reaſon, which is the Touch-ſtone by which the truth or falſity of all Learning is diſcovered.

The *Galeniſts*, ſuch as we have ſpoken of above, do firſt blame the Remedies prepared by Chymical Art, for three reaſons: The firſt, becauſe theſe Remedies cannot be wrought but by Fire. The ſecond, becauſe they are extracted from Minerals. And the third, becauſe their Action is too violent. To theſe heads, we anſwer in order, and ſay firſt, That if whatſoever paſſes through fire, and cannot be prepared but by it, was to be blamed, it would go ill againſt the Cooks, who without it can dreſs no meats; and thoſe very Apothecaries, which according to their Preſcriptions prepare their Medicaments, would ſtand in oppoſition to their exceptions. Secondly, that all Chymical Remedies are not extracted from Minerals; though it may be objected to them, that they uſe them in their own Diſpenſatories; but that the greateſt and beſt part of the choyceſt Chymical Remedies are taken from the Family of Vegetables

and

and Animals. And for the third point, we ſay, That if any Chymical Remedies have a violent action, and the Chymical Phyſitian doth make uſe of them in deſperate and refractory diſeaſes, he doth nothing in this caſe, that *Hippocrates* hath not done, who made frequent uſe of Hellebore, the violenteſt of all Vegetables: If they object, that this great Phyſician made uſe of this Remedy only for want of a better; it may be as rationally anſwered again, that Chymical Phyſicians neither do uſe theſe violent Remedies, but in deſperate Diſeaſes, and that becauſe *Extremis morbis extrema remedia conveniunt.* To ſay, that all Chymical Remedies are violent, is an aſſertion of ignorance; for Chymical Artiſts do prepare them with ſo neat and in ſo neceſſary a manner, that they become by it pleaſanter to the taſte, more ſalutiferous to the body, and leſs hurtful in their operations. And it is in this properly, That Chymical *Pharmacy* doth differ from the *Galenick*, which prepares alſo in a manner Medicaments, and doth pretend to correct the vices and violence thereof; but not with that requiſite nicety and perfection, as to ſeparate Purity from Impurity, and Homogeneous from Heterogeneous Subſtances. For, who will not confeſs, that a Patient will rather take ſome few grains of Magiſtery of Jalop, or a Pill of ſome Panchymagogical Extract; or finally, a very ſmall doſis of well prepared Mercury, which may be wrapt in ſome Conſerves pleaſing to the taſte, or delicate Jelleys, or finally, be diſſolved in ſome pleaſant Liquor, then to ſwallow a *Bolus*, of five or ſix ℥ of *Caſſia*, or double *Catholicon*: that he will more reſolutely take three or four grains of ſome Sudorifical, Specifick as Bezoard Mineral, then to ſwallow a full glaſs of ſome Theriacal Diſſolution, or *Opiatum Salomonis*: That he will look with a better Eye upon a Broth wherein 1 ℈ of Vitriolated Tartar ſhall be diſſolved, then a great Glaſs of *Apozem*, or ſome Magiſterial Syrup after the old way, the Receipts or Preſcriptions whereof are commonly of the length of one foot and a half.

But it will be moreover objected, That although Chymiſts do cry up the ſweetneſs and pleaſantneſs of their Remedies; they muſt nevertheleſs confeſs, that there is in them more danger then in others, becauſe they are extracted from Minerals. It is confeſſed, that many Remedies in Chymiſtry are taken from the Family of Minerals: But for all this, it muſt not, nor cannot be granted, that they are venemous, or contrary to the nature of Mans Body, and to affirm it, is the height of ignorance. For if ancient Phyſicians, have uſed them raw, as they were, and without any Preparation, as may be ſeen in *Galen*, *Dioſcorid*, *Pliny* and ſeveral other Authors; If modern *Galeniſts* have alſo imployed them, as *Rondeletem*, which in his Pills againſt the Pox uſes crude Mercury; *Mathiolas* who hath put in practice Antimony, which by excellency he calleth *Manus Dei*; *Geſnerus* hath done the ſame with Vitriol; *Fallopius* with the filings of Steel; and *Riolanus*, and many others, with Brimſtone, for Diſeaſes of the Lungs: Why ſhall Chymiſts be debarred from the ſame Remedies, after they have prepared, corrected, and deveſted them from the malignity and venom which they did contain, by the ſeparating of Purity from Impurity? which is much a better way then the pretended correction of *Galeniſts*, who indeavour to mitigate the vices and malignity of Mixts, uſed by the Ancients and Moderns alſo, by the addition of ſome other Subſtance, which may have, and really hath, in it ſelf its particular Vice and Impurity: as it is obvious in Hellebore, Spurge, Scamony, Coloquint or bitter Gourd, Agarick, and ſome others, which they pretend to correct by a ſimple addition of Maſtick, Cynamon, Cloves, Gum Dragant, and Ginger. But to ſhow the manifeſt difference between this Correction and that of Chymiſts; we may uſe the vulgar compariſon of an unskilful Cook, which to dreſs a ſavoury and dilicate diſh of Tripes, ſhould think it enough to boil them with odoriferous Herbs and good ſents, without waſhing and cleanſing them from their inward filth.

Again, the *Galeniſts* will inſtance, and ſay, that Chymical Remedies, by reaſon of their ſharpneſs and acrimony, are not to be truſted. But to that we anſwer, That if the uſe of ſharp things muſt be baniſhed from Phyſick, it muſt with more reaſon be forbidden in Food, and ſo conſequently all diſhes and ragouts wherein Salt, Vinegar, Verjuice, Leek, Onion, Muſtard, Pepper, and all other kind of Spices are Ingredients, muſt be excluded from the Kitching uſe, as well as many Medicines blotted out of Antidotaries. Neither do they perceive, that by this argument, they thwart *Galen* himſelf, who hath placed Cantharides among mortal Medicaments, by reaſon of their corroſion, particularly upon the Bladder; he doth notwithſtanding ordain them, and ſo do his Sectators preſcribe them, though in ſome ſmall quantity, in ſome convenient liquor, to provoke Urine; to which end and purpoſe he doth highly commend them.

The ſame do Chymiſts uſe to do, who give their ſharp Remedies in ſome proper and ſpecifical Liquor, to produce ſuch Effects as they hope from their Medicaments. But to ſtop fully the *Galeniſts* mouth, we muſt prove that they uſe in their common practice, though Empirically, Chymical Remedies, whether they be natural, or artificial, as for Example: Do they not make uſe of crude Steel and Mercury, and many more natural Mixts without preparation? Do they not uſe Spirit of Vitriol, Spirit of Sulphur, Mineral Cryſtal, Cremor and Cryſtals of Tartar, *Crocus Martis* aperitive and aſtringent, Salt of Vitriol, *Saccharum Saturni*, or Sugar of Saturn? And though moſt of them be unacquainted with Antimony, and the true time and method of exhibiting this admirable Remedy; yet nevertheleſs do they give it in ſtealth to their Patients, diſguiſing it oftentimes with ſome infuſion of Senne, or ſome potion of their ordinary Pills; for they mix Emetick Wine in their Infuſions, and Emetick Powder in their Pills. But, that which is yet more to be noted, and conſidered, is, That when *Galeniſts* by the obſtinacy of the Diſeaſe, are at a ſtand, and can no longer find in their method a Remedy to cure, and eradicate the evil of it, becauſe they never attained to the perfect knowledge of it, they uſe to ſend their Patients for a laſt Refuge, to Baths and Mineral Springs: which practice of theirs, makes them tacitely to confeſs, that there is in Minerals a more potent, penetrative and active Vertue, then in any other of thoſe Remedies, which they did put in practice before.

This Truth is further confirmed by thoſe Remedies which Chyrurgions do daily uſe with very good ſucceſs, being for the moſt part compounded of Metals and Minerals; but thoſe principally which do work with more efficacy. It is true, that Chymiſts do likewiſe ſend their Patients to Mineral waters, and enjoyn them the uſe of them: But there is this difference, between them and *Galeniſts*; that the firſt are diſtinctly acquainted with the Sulphur, Salt or Spirit, which predominates in the Waters by them preſcribed; which the others do not, having but a confuſed and ſuperficial knowledge of the Vertue reſiding and hidden in theſe waters; and preſcribing them only, becauſe others have uſed them before; not being capable to ratiocinate upon the Effects by them produced, much leſs to prove the Efficient Internal Cauſes of the ſame; ſince it belongs properly to the ſearch of Chymiſts, whoſe peculiar work it is, to anatomize Mineral Waters, and demonſtrate what Fire, or Volatile Subſtances, are contained in them: And if the ingenious Artiſt finds not himſelf fully ſatisfied with examining the Waters, he muſt further extend his inquiſition in working upon the Earths adjacent to thoſe Mineral Spirits, and endeavour to diſcover what Metal moſt abounds in the *Marcaſſites* growing about that place: that done, it will be eaſie for him to find what Salt, or what Spirit is the moſt fitting to diſſolve that Metal, and to unite and mix it ſo indiviſibly as it is, with the water; and being thus inſtructed, he can never fail to aſſign pertinent and demonſtrative reaſons both of the effects and cauſe of the vertue and efficacy of thoſe Mineral Waters. If it be anſwered, that *Galeniſts* do alſo give the reaſons of ſuch effects, and aſſign them to the Salt, Sulphur, or Spirit predominant in theſe Waters; I reply, that they ſhall never fully ſatisfie a curious inquiſitor and ſearcher of truth in Nature, by their reaſons taken from the Doctrine of the Schools: But, that they muſt have borrowed this light from Chymical Authors, and ſo far they are no more a *Galenical* Doctrine; ſince they reaſon only upon the grounds, and by the Organs of Hermetical Philoſophy. Let us then conclude in the behalf of Chymical Remedies, and ſay, that they are the true weapons, where-with a Phyſician muſt arm himſelf to conquer and extirpate the moſt ſtubborn and rebellious Diſeaſes; and even ſuch as are held incurable by the ordinary Remedies of *Galenical* Phyſick; and ſo we conclude this ſhort Apology in the behalf of Chymical Remedies, whoſe wonderful nature it is, ever to act *Citius, Tutius, & Jucundius.*

CHAP. III.

Of the Faculties of Mixts, and the ſeveral degrees of their Qualities.

After all we have ſaid above, we are to conſider what benefit we can reap, by ſeparating the five Principles which may be extracted out of Compounds, to exalt the Vertues and Faculties of Remedies, and qualifie them with convenient and various degrees according to their nature. Having then diſtinguiſhed the various Subſtances, which an Artiſt may extract out of Natural Bodies, and having taken notice, that ſome of them do more or leſs abound with Sulphur, Salt, Spirit, Earth, or Phlegm and that theſe five Subſtances are found in all the Mixts of the three Families of Nature, which are Animals, Vegetables, and Minerals: It ſeemeth that ſomething may be lawfully determinated in Phyſick for the uſe of it, and diſcovery of ſuch vertues and ſpecifical qualities, as are proper to each of the Subſtances, extracted out of the Mixt Bodies. For, as

Vulgar or Dogmatical Phyſick hath attributed all, to the ſeveral degrees of firſt and ſecond Qualities: we muſt in this Chapter open the true knowledge of the ſpecifical vertues of each principle of the compound, that what we ſhall here deliver, may ſerve for an Introduction to the better underſtanding of thoſe Authors, who hitherto have written thereof; for it may be ſecurely affirmed, that whatſoever abounds in Oil, participates of the qualities of Oil, and ſo of the Spirit and other conſtitutive parts. We might alſo inſert here a Catalogue of all the Mixts, wherein Sulphur is predominant; as alſo of the Compounds, where the other Principles do abound. We could likewiſe Anatomize all Natural Bodies, to know preciſely in what *doſis* or proportion they poſſeſs either of the five Principles, and how Nature hath diſtributed them to every one in particular, and having perfected ſuch a work, we mought very well brag, of a diſtinct and abſolute knowledge of the Faculties of all natural things. But, as it is not only a work above the extent of any one ſingle mans life; and even that many Artiſts put together were not ſufficient for it; and that beſides this conſideration, many Volumes would be of too narrow a compaſs to contain the Notes of ſuch Experiments: we will content our ſelves, to ſpeak only ſomething of it by the by, when we come to the deſcription of the work which may be done upon each Mixt, not exceeding the limits firſt propounded to our ſelves in the delineation of this Abridgement.

To return then to our ſeveral Degrees of Qualities of Mixts, or the five Subſtances which may be extracted out of them: We ſay firſt, that Oil doth heat, or perform its operation by the means of heat, which is a more excellent Quality then that which is ſtiled Elementary. As for Example, We ſee by a common and familiar Experiment to all, that if the Oil, or Æthereal Spirit of the Wine, which is its ſulphureous part, be ſeparated from its Volatile Salt, exalted by Fermentation, which we vulgarly call *Aqua vitæ*; that which remains hath no heating faculty left, and is quite unapt to communicate any part more of that Quality, which we do attribute to Oils and Spirits; but, if you joyn again this portion of Ætherial Oil, or Spirit to its Phlegm or watery part, you ſhall reſtore it immediately to its capacity of heating which it had before; which makes us to conclude, that the more a Mixt doth abound in Ætherial Oil, and Volatile Spirit, the more is it fit to impart heat, ſtrengthen and encreaſe our ſpirits, as being more analogous and correſpondent to the nature of our vital Spirits, as alſo of the Animals, becauſe this only portion of the

Mixt is able to be conveyed and paſs to the laſt digeſtions.

The ſame judgment may be made alſo of all the family of Vegetables; for we may ſay confidently, that the different parts of Plants have divers Degrees of Qualities, according as they have been more or leſs fermented, digeſted and concocted by the external heat of the Sun, concurring with their internal and eſſential, which is contained in their Salt, which is as the rind and cover of their fermenting and digeſtive Spirit; and according as this Salt is exalted, by the actions of theſe two efficient cauſes, the parts of the Plants do participate of more or leſs efficacy. So is the firſt place aſſigned to the Seed of the Plant, becauſe it is exalted to its perfection, and contains in it ſelf, that germinative and ſpermatick Spirit, which is capable to produce and multiply it ſelf into its like; and that in the body of the Seed Nature hath likewiſe gathered, concocted, digeſted and concentrated all the Salt, Sulphur and Spirit of the Body of the Plant; as it appears by the Diſtillation of Seeds from which a great quantity of Volatile Salt is extracted, which is nothing elſe but the three Principles volatilized and united together, by the Internal heat of the Plant, and the External of the Sun: and in this Volatile Salt it is, that the vertues of all things lie hidden, which hath given occaſion to *Van Helmont*, to call them the *General Lieutenant* of the *Arcana*. Thence muſt we by degrees deſcend to know by divers ſteps the qualities of the other parts of Plants, following the ſame Ratiocination we have already made upon the Seed, for in the Flower there is leſs vertue then in the Seed, in the Leaf leſs then in the Flower, and in the Wood leſs then the Rind; and the Fruit is better then the Leaf, and ſo of the other parts of the Vegetable, which all are to be eſteemed according as they do abound in Oil, Spirit, Eſſential or Volatile Salt. But we muſt digreſs a little here, to note a difference which is between the annual and laſting Plants: for ſome have the ſeat of their vertue placed in the root, the others in the leaf, and moſt in the Seed; therefore all theſe circumſtances are to be weighed, to make a right and ſolid judgment thereof, and to examine them by the external ſenſes and ratiocination, and make the choice thereof accordingly.

All what we have ſaid above, may be alſo applyed to the other Principles, for diſtinguiſhing the Degree of their Faculties; for if, by Example, a Mixt be deprived of its Salt, it ſhall loſe its deſiccative, deterſive, coagulative faculty, and all other proprieties proceeding from, or depending upon Salt. Now it is poſſible, that one Mixt compared to the other, may have two, three, four or five times more or leſs of Salt, Spirit, Sulphur, Phlegm or Earth, according to which the riſe and rule muſt be taken, for ſubdividing the Degrees of its Faculties; when the Artiſt ſhall have diſcovered by his work, the exceſs or defect of what produces the vertues of Natural Bodies, that being yet hidden from our knowledge either by the neglect of Writers, or the ignorance of thoſe Mongrel Phyſicians, which neither knew their Mother, nor the Children of her Womb: for we ſee that the juice of Barberies, Oranges, Limons, common and diſtilled Vinegar, the Spirit of Vitriol, common Salt, Nitre, Tartar, and many more like, do deſerve to have ſeveral Degrees of Qualities attributed to them, conſidering their eminent actions, which proceed from the exceſs or defect of ſome Principle more or leſs depurated; by which it doth appear, that Mixts have more or leſs of efficacy, action, and vertue, according as the Efficient Principles are more or leſs in them; wherefore we may with very good ground and reaſon ſeek in Chymiſtry a ſolid foundation, for encreaſing the Ornament and Variety of Phyſick; correct the vulgar Pharmacy ready to fall to decay; and examine throughly the practiſe of common Phyſicians.

CHAP. IV.

Of the Order which we will follow in the Deſcription of Chymical Operations.

THE order to be obſerved in the deſcription of the five Principles extracted from the Mixt Bodies by Chymical Operations, may be given two ſeveral ways: for there may be firſt compiled in a Treatiſe all the Waters, either ſimple or compounded, according to their ſeveral kinds, as alſo the Oils in another, and ſo of the Salt, and likewiſe each other of the Principles. Secondly, Theſe Subſtances may be deſcribed in the ſame Order, as their Extraction out of the Individual Bodies of Nature is performed. This laſt method we intend to follow, as that which ſatisfies better the mind of the Inquiſitor, and breeds leſs confuſion. We ſhall then accordingly give to each Mixt in particular a chapter by it ſelf, wherein we ſhall give an exact deſcription of the nature of the Mixt; and of all the Chymical Operations uſeful and neceſſary to Phyſick: forgetting nothing of what may conduce to the exact information of the Artiſt, in exactly and curiouſly anatomizing the Mixt upon which he doth intend his Operation, untill he hath ſeparated all the ſeveral parts wherewith Nature hath endowed it.

And to proceed more methodically, we ſhall begin by Meteors, wherein we are to ſpeak of Rain, Dew, Honey, Wax, and Brine or Sea-water; next to which, we will teach thoſe Preparations which belong to Animals and their parts. Then we follow ſpeaking of Vegetables; where we will teach, how the parts of that rich and numerous Family are to be anatomiz'd; and finally, end by Minerals, examining the contents of Stones, Salts, Marcaſſites, and Metals, whereof we ſhall ſeparate the hardeſt, and fixeſt parts, to draw from thence thoſe wonderful Remedies, which are lockt up in the Center of thoſe true fruits of the Earth.

CHAP. V.

Of Dew, and Rain.

AS Chymiſts can neither extract nor diſſolve, without ſome fitting and convenient Liquor, adapted to the nature of thoſe Subſtances whereof the vertue is deſired (this Liquor Artiſts do commonly call their *Menſtruum*, and this word being the moſt proper and beſt known, we will only make uſe of in all the Operations we are to deſcribe) as (I ſay) Chymiſts can perform no Operation without their *Menſtruum*; ſo hath their care and invention, much laboured to find out one, which ſhould be deveſted of all particular qualities, and agreeable to all ſorts of Mixts, beſides the particular *Menſtrues* which they poſſeſs, and which are deſtinated for the extraction and diſſolution of ſome particular Subſtances and Compounds. The Sons of Art, upon this account, have thought no Subſtance to be more conducible to their end, then that which is the pureſt and moſt ſimple in Nature, *viz.* Dew and Rain water; both containing in themſelves the Univerſal Spirit, and capable to yield their univerſal *Menſtruum*, fit for extracting the vertues of things, and to be ſeparated again from them, without robbing or depriving them of any part of their vertue and excellency; provided theſe two Liquors be well and duly prepared.

It is needleſs to repeat that Dew and Rain are two Meteors, ſince we have already ſpoken of it, in the firſt part of this Treatiſe: It will ſuffice to ſay, that Rain-water muſt be gathered from the beginning to the twentieth of *March*, (or eight days before the *Æquinox*, and eight days after) becauſe then the Air is all filled and impregnated with thoſe true heavenly ſeeds that are deſtinated to the renewing of all natural productions; and when the water hath been elevated from the earth, and deprived of the ſeveral ferments wherewith the divers generations made within and without her Womb, had filled her, ſhe doth fall again through the Air, where ſhe is furniſhed anew with a pure Spirit, undetermined to all things, and fit to aſſume my ſhape. And ſo much ſhall ſuffice, to ſhew the neceſſity of chooſing the *Æquinoctial* time, for gathering of the Rain-water.

Gather then about this time great ſtore of Rain-water, and leave it in a great wooden Tub or Veſſel very clean, in an open place, and free to the Air, and there let it ferment, to make a Sediment of the moſt groſs Impurities, which it might have contracted from the roofs and gutters of houſes, or other conveyances through which it paſſes, and is conveyed unto us; it ſhall yield moreover a kind of skin or froth above, which perfects its depuration; after this fill therewith great Stone-bottles, Glaſs-Veſſels, or Casks, if you will keep any as it is then, being then even ſo, fit for many Operations, and more uſeful then any other kind of water whatſoever, as we ſhall make appear in the ſequel of our practice; for it is of a more ſubtile nature then other waters, and abounds with a ſpiritual Salt, the only capable Agent to penetrate well into the Mixts.

But if you will ſubtilize more this water, and render it more capable to to extract the tincture and vertues of things, you muſt diſtil it through the Worm, as you do Spirit of Wine, and draw only the two third parts of what your Veſſel contains, reiterating this Diſtillation, by diminiſhing ſtill proportionably, till from a hundred pints you have but ten, which will afterwards ſerve to the extraction of purgative Subſtances.

The ſame may be done with Dew, which is to be preferred to Rain-water; the time to gather it is *May*, becauſe then it is much more impregnated with the Univerſal Spirit, and filled with that ſpiritual Salt, which adminiſters nouriſhment to all things, cauſeth their generation, and gives them maintenance.

CHAP.

Chap. VI.

Of Honey and Wax.

YOU muſt not think ſtrange, if we reckon Honey among Meteors, ſince Dew contributes much to its generation; for it thickens after its falling upon Plants, detains and condenſes in it ſelf thoſe vapours, which Plants do continually exhale, aſſiſted by the cool of the Night; and the Suns heat doth digeſt and concoct all into Honey and Wax, which Bees do afterwards gather, and carry into their Hives, for their own ſuſtenance and nouriſhment. From this that we have ſaid, the conſequence may eaſily be drawn, why one ſeaſon of the year doth abound more with Honey then the other. The beſt Honey is that which is of a whitiſh yellow, pleaſant to the taſte and ſmell, neither too thin nor too thick, compacted in its parts, and eaſily melting upon the tongue. That which young Bees do yield, is better then old Bees Honey. From it is extracted a Water, an Oil, a Spirit, Salt, and Tincture. From Wax alſo, which is an Emplaſtick cleaving ſubſtance, is extracted the Phlegm, Spirit, Butter, Oil, and a very ſmall proportion of Flowers, which are nothing elſe but the volatile Salt of this Compound.

The manner of Extracting the Principles of Honey.

TAke a quantity of Honey, and put it in a Glaſs Veſſel, white Earth, or Stone Bottle Earth, and put above it about ii ℥ of Hemp, or Flax-Tow, to hinder the Honey from raiſing into the head by its ebullition; cover the Glaſs or Veſſel with its head or Limbeck, and lute or ſtop well the joynts with two bands or fillets of Paper, ſpread over with Pap made with flower and water boiled together; put your Cucurbite or Veſſel in ſand, and give a ſlow fire at firſt, to extract only the Water by this firſt degree of heat; then change your Receiver and increaſe the fire, which ſhall drive up a ſecond water, of a yellowiſh colour, containing the Spirit; and increaſing yet one dedegree more, you ſhall have a red Spirit with its Oil, which muſt be ſeparated by the Funnel, and the Spirit rectified. That which remains in the bottom, calcine in a Reverberatory Furnace, to extract the Salt thereof with its own Phlegm, and then evaporate either to a total drought, or to a skin only, to get Cryſtals in a cool place.

Both theſe Waters of Honey, *viz.* the Clear and the Yellow, are very uſeful to cleanſe and clear the Eyes, take away films, ſpots, or blemiſhes; to cauſe Hair to grow: the Spirit is a great remover of Obſtructions; for, being taken from fifteen to twenty drops, in Apertive Waters, or decoction of Nettle-roots and Burdock, it opens all Obſtructions, provokes Urine, and drives away Gravel, clammy and viſcous humours in the Reins and Bladder. The Oil being circulated in Spirit of Wine twenty or thirty days, becomes very ſweet and pleaſant; it conduces wonderfully to the cure of Gun-ſhots, and to cleanſe corroding and cancerous Ulcers: It is a ſingular remedy to appeaſe the pain of the Gout; as alſo to take away the ſpots of the face, being mixt with a little Oil of Camphire.

To make Hydromel or Mead, and the Vinegar of Honey.

TAke a q. of very good Honey, and viii p. of depurated Rain-water, or River-water, left ſome days in a Veſſel, to defecate and cleanſe it ſelf from Impurities; then let it boil ſoftly to the conſumption of one half part, being firſt exactly skimmed. This remaining Liquor put in a Cask, and upon every 30 pints of Liquor put ℥ i. of Salt of Tartar, and ℥ ii. of the Tincture of the ſame Salt to help Fermentation, which within the Philoſophical Month, which is 40 days, will be compleated: But you are to note, that every day the Cask muſt be filled anew, to repair what the fermenting Spirit drives away: that done, put the Cask in a Cellar and ſtop it well: and this may be uſed for a very good drink, both by healthful and craſie bodies.

But when you will make Vinegar, put, in the Veſſel wherein you have boiled your Honey and Water to a half conſumption, as you are directed above, a knot containing the pounded ſeeds of
groſly beaten, and leave the Cask in a warm room if it be Winter, or expoſe it to the Suns heat if Summer, until the Liquor hath done boiling and fermenting; and it will by degrees and ſlowly turn into very good Vinegar; which may be diſtilled as the other uſes to be. It is an excellent *Menſtruum* for the diſſolving of Peble-ſtones, and all others, though not calcined before; and this is that Vinegar which *Quercetanus* doth call in his writings, the *Philoſophical Vinegar*. You are to note alſo, that the ſame Author doth often make mention of Honey, in his Works, under the notion of Dew, or Heavenly *Manna*.

To

To make the Tincture of Honey.

THis Tincture is not one of the meaneſt remedies, extracted out of this Meteor; either by reaſon of the peculiar vertues of the Mixt, or that of the *Menſtruum*, uſed to extract the faculties of this Heavenly Manna, much more full of efficacy, then thoſe have imagined which fancy that it is eaſily converted into choler; led thereto by that falſe Axiom of their School, which they take for a granted truth, that *Omnia dulcia facilè bileſcunt*, not apprehending, that theſe alterations of temper, are not wrought in us by the mixture of humours, but that all is performed by the ſeveral fermentations, which have their riſe and original in the Ventricle, and that the Leaven or Ferment is either healthful or ſickly, according to the good or evil Idea's, which the ſpirit of Life hidden in Man, hath conceived. To return then to our matter, we ſay, that Honey is one of the ſublunary ſubſtances that hath more in it ſelf of Univerſal Spirit, and that none is fitter to be reduced to the nature of that general Agent of the World, to perform thereby wonderful remedies in Phyſick; provided we preſerve in it ſomething of its ſpecification, whereby it may become uſeful and ſenſible.

Chooſe then the beſt and pureſt Honey you can find, according to the notes we have already given, and mix one part of it with 3 p. of the cleanlieſt and pureſt Sand you can meet with, beating all together in a Mortar, and reducing it to a maſs, whereof make pellets of a convenient bigneſs, to paſs through the neck of a Matraſs: thus being put in, pour upon ſpirit of Wine well rectified, and let it riſe over the matter three or four fingers; then let another Matraſs be inſerted in the neck or Orifice of the firſt, about two fingers deep, and lute the joynts of the two Veſſels, with two fillets of Neat or Swines Bladder, dipt in white of Eggs, reduced to water by frequent agitation; (note this manner of luting the joynts or commiſſures of Veſſels, for all the Operations which from henceforth ſhall be deſcribed.) Then tie your Matraſs to the Cover of your *B. M.* and ſuſpend to the vapor, and ſo digeſt the Honey with its *Menſtruum*, until the ſpirit of Wine be well impregnated, tincted, and loaded, with the internal Sulphur of this Mixt, which the *Sp. V.* will attract, by reaſon of the analogy which is between it and this Principle. This being done, leave the Veſſels to cool, then open them, and filter the tincture through gray Paper, and having poured it in a ſmall glaſs Body or Cucurbit covered ed with its head, luted the joynts very exactly, and adapted a fitting Receiver, draw by diſtillation half of the Alkohol of Wine, with a very ſoft heat of the *B. M.* and the Bath being cooled, open your Veſſels, and keep choyſely the remaining Tincture in a glaſs Viol, with a narrow mouth, and well ſtopt with Cork firſt ſeaſoned in melted Wax, to ſtop the poroſities of it, and cover it with a doubled wet Bladder and a Paper, that nothing of the vertue of this Remedy may exhale or vapour away, by reaſon of the great ſubtilty of its parts, to uſe when you have occaſion.

The uſe of this tincture is almoſt heavenly, in all affections of the Breaſt or *Thorax*, wherein ſlimy and viſcous ſeroſities, gathered in the hollow or capacity or cavity of it, are the cauſe: For it hath a ſubtilizing and diſſolving vertue, ſufficiently ſtrengthning the Patient to expel by ſpetting, what he finds obſtructive and cumberſome, or to drive away by urine, ſweating, or inſenſible tranſpiration, which are the nobleſt and moſt ordinary effects of ſuch remedies as come neareſt to the Univerſal Medicine. Such rare Medicaments do prove the truth of this celebrated Maxim, that *Natura corroborata, eſt ominum morborum Medicatrix.* The Doſis of this Tincture is from one fourth part of a ſpoonful, to a whole, for the more advanced in age; and from five to twenty drops for Children: It may be given alone, or mixt in decoctions, or ſpecifical waters appropriated to the diſeaſe; as are the waters of Colts-foot flower, the roots of butter-Bur, the white and odoriferous Hore-hound, Juniper-berries, and roots of *Enula*; becauſe all theſe ſimples do abound with a penetrating and volatile ſpirit: it may alſo be exhibited in broths, or the ordinary drink of the Patient.

To extract the Oil of Wax.

FRom Wax, as alſo from many other Mixt Bodies, may be extracted a Phlegm, an acid or ſharp Spirit, an Oil, and the Flowers which we have ſaid to be its volatile Salt. But as theſe ſubſtances (the Oil excepted) have no great uſe in Phyſick, we ſhall not inſiſt here upon their deſcriptions; contenting our ſelves to impart here an uſeful, eaſie and compendious way of making the Oil of Wax.

Take ℔ i. of yellow, well-ſmelling, and depurated Wax; melt it with a gentle heat in a Copper skellet, ſhutting with a cloſe Cover; and if you have a Fire already kindled for ſome other purpoſe, take red burning Coals, and extinguiſh them the one after the other in the melted Wax, until they are ſufficiently imbibed, and well filled with it: and thus continue until all the Wax be thus conſumed, having a ſpecial care in the mean while to cover cloſe the Skillit every time you throw the Coals in it, leaſt the Wax ſhould take fire; then pound the Coals to an indifferently groſs powder, and mix it with equal weight of decrepitated Salt; and having put this mixture in a glaſs Retort, leaving the third part empty, place it upon a Sand-furnace, with a ſufficiently ample Receiver fitted to the neck of it, and lute exactly the joynts with Bladder and whites of Eggs, then having dryed it leaſurely, give fire to it by degrees, until the vapours begin to ceaſe of their own accord, which ever happens within the ſpace of fifteen or twenty hours, and all being ſetled and cooled, ſeparate the Oil which is yet groſs and thick from the aqueous Liquor, and keep ſome part of it in that conſiſtency, to uſe outwardly, but rectifie the reſt in a low Cucurbite, and mingle with 3 or 4 ℔ of White-wine, and ℥ iv. of Salt of Tartar, diſtilling it with all the care and exactneſs which is requiſite to a very ſubtile and penetrating Oil, upon Aſhes: Thus ſhall you have the Oil of Wax, as clear, fluent, and penetrating as the *ſp.V.* endowed with many peculiar vertues, both for internal and external griefs. It is exhibited inwardly in ſome Diuretick Liquor, from 6 to 12 drops, in retentions of Urine; and for the ſame purpoſe may alſo be given in Parſly-water, and Saſſafras-wood-water, or decoction, as alſo of *Lignum Nephriticum*. Outwardly applyed, it is very reſolutive, which makes it of great efficacy to diſſolve all ſchirrhous tumours and ſwellings; good alſo to reſtore motion to Paralytical and contracted Members, and cure all cold aches in the nervous and ſinewous parts of the body; it is alſo uſed with very good ſucceſs againſt *Sciatica*, and cold Gout in hand or feet. The Butter or groſs Oil, which you keep unrectified, cures the chaps of the lips cauſed by cold, and cicatrizes and heals again the ſoreneſs of chaps in the Nipple. The aqueous Liquor or Phlegm being rectified, you ſhall find a fourth part to be a Spirit of Salt, not of leſs vertue then that which is diſtilled alone.

Chap. VII.

Of Manna.

Pliny doth, not without reaſon, call *Manna* the Honey of the Air, containing in it ſelf a heavenly nature : I have ſaid, that he call'd it ſo, not without reaſon ; becauſe Manna is nothing elſe but a Dew, or a ſweet pleaſant Liquor, which about the time of the *Equinox*, falls upon the branches and leaves of Trees, thence upon Hearbs, Stones, and ſometimes upon the Earth it ſelf, and in a ſhort time is condenſed, and takes a form of drops of Gum.

That which commonly is choſen for the beſt, is the Oriental, as the *Perſian* or *Syriack*; but that which ordinarily comes from *Calabria*, a part of the Kingdom of *Naples*, may very well ſerve turn; it muſt be white and new, for when it grows reddiſh, it is a ſign of age, and that it hath loſt that celeſtial and ſpirituous part, wherein did conſiſt its vertue.

To make Spirit of Manna.

Take of Manna well choſen *q. s.* put it in a glaſs Cucurbit, covered with its head; lute them both exactly together, and having fitted a Recipient to the Limbeck, give it a ſlow fire, thence ſhall come forth a taſtleſs ſpirit, of very great vertue; for it is a great ſudorifick, which with very good ſucceſs is given, both in peſtilence and ſpotted Feavers, as in all ſorts of common Anguiſh diſtempers; this Spirit doth provoke ſweat copiouſly, and expells the excrements of laſt digeſtions, as may be evidenced by the unpleaſant ſmell of the ſweat which it provokes. The Doſis is from one half ſpoonful to a whole one.

Moreover, this Spirit hath a peculiar vertue to diſſolve Brimſtone, and extract the yellow Tincture of it, which is not one of the leaſt remedies for eaſing the breaſt, and the principal parts about it, when oppreſs'd: For this Tincture is as a reſtoring Balſom, to correct the defects of the Lungs, and ſtrengthen and preſerve their action. It may be given in Juice of prepared and depurated, as we ſhall direct in the Chapter of Vegetables, from one drop to twelve.

There may be alſo a water of Manna made, which ſhall be both laxative and ſudorifick: For this end, ℞ a parcel of well-choſen Manna, two parts of very pure Nitre, and put them both in a Neat or

Hogs Bladder, and having exactly tyed it, ſuſpend the ſame by a ſtring in boiling water, till all the two ſubſtances be well diſſolved: This Liquor or Diſſolution muſt you diſtil, as we have ſaid of the Spirit; and you ſhall have an inſipid, laxative water, provoking ſweat copiouſly: The Doſis is from i ʒ to vi ʒ, in a broth or ſome pectoral Decoction. This water may prove a very good remedy to attract forth the ſuperfluous ſeroſities, which ordinarily do breed Rheumatical Defluxions.

Chap. VIII.

Of Animals.

TO treat of Animals, is a part of *Chymical Pharmacy*, containing the remedies extracted out of Animals, and the way how to prepare them: And as the object of Chymical Philoſophy are all natural ſubſtances, ſo doth ſhe extend her Operations upon all Animals, and Man it ſelf, the moſt perfect and accompliſhed of all. But as the extent of a *Compendium*, or Abbreviate Treatiſe, cannot reach to an exact enumeration of perfect Terreſtrial Animals, neither of Fouls, Fiſhes or Inſects, which are the four Claſſes or Diviſions of this vaſt, beautyful, and noble family of Animals; it ſhall ſuffice for our deſign and purpoſe, to make firſt ſome obſervations upon the nature of Animals in general, and the choice which an Artiſt is to make of them, when he intends to draw from them thoſe wonderful remedies which they contain, to eaſe the griefs and miſery of mankind; thence ſhall we paſs upon ſome of the Operations made on them, to be as a Guide and an Example, whereby to work upon all others of the like nature.

We ſay then by the way, that as all Animals are made of a more volatile, ſubtile, and aerial ſubſtance, than the Vegetables on which they feed; ſo in their ultimate reſolution, which Art doth perform, have they leſs of Earth, and of diverſity of Subſtances: whence it is, that there are only three efficacious Medicines may be extracted from them, *viz.* Spirit, Volatile Salt, and Oil: We will not loſe time in debating here, whether the forms of theſe Animals are ſpiritual or material; being a diſpute more of curioſity then uſe. We will only ſay, that the Artiſt muſt chooſe the ſoundeſt and healthieſt Animals to extract his remedies from; that they be of a middle age, that the parts may have attained to a requiſite firmneſs, ſolidity and perfection; for it is well known, that Animals do daily die, as they advance in age, after they have paſt a certain ſtate and period of perfection, which according to the nature of each is the limit of their duration, and their *Ne plus ultra*. It is alſo requiſite the Animal ſhould dy a violent death, chiefly by ſtrangling and ſuffocating; becauſe ſuffocation doth concentrate the ſpirits in their parts, and hinders their diſſipation; and that it is in the preſervation of this flame and vital light, that properly inhabits, and makes its reſidence, the vertue of Animals and their parts, as is manifeſted by the following hiſtory of what happened at *Montpellier*, as *Bartholinus* relates it in his Centuries: Which is, that a woman having bought in the Shambles Meat newly killed, and ſteeming yet with the heat internal, hung it in the Chamber wherein ſhe did uſe to ſleep; having ſome occaſion to wake at night, ſhe was ſurprized, to ſee a great light in her Chamber, though the Moon did not ſhine; ſhe at firſt was affraid, not imagining the cauſe whence it did proceed; but at laſt ſhe perceiv'd, that this light did proceed from the meat ſhe had hung up; and the next morning related it to her neighbours, which deſirous to ſee this thing, which by relation ſeemed to them incredible, were confirmed in the truth and belief of it by their own eyes: A piece of this Luminous Fleſh was carryed to the Prince of *Conde*, then Governour for his Majeſty in *Languedock*, in the year 1641. and this Fleſh at laſt did loſe its light, as it came nearer its corruption. This truth cannot be contradicted in the hiſtorical part; and curious ſearchers of Nature, may ſee whenever they liſt, that ſparks of light do iſſue forth out of living Creatures, if they take the pains to rub a Cat-skin in the dark, againſt the hair, a ſufficient proof to verifie more and more, that light is not only the Principle of Compoſition in all things, but is alſo the Principle of their preſervation, and the chief cheriſher of life. The fore-going relation makes me remember a complaint which ſome Butchers Prentices did make at *Sedan*, that coming by night-time into their Slaughter-houſe, they did perceive ſome extraordinary light, which ſuperſtitiouſly they did attribute to apparitions of Evil Spirits, not without horrour and affrightment, whereof I was an ocular witneſs: but when there was any Candle lighted in the place, the light did vaniſh away; by which it was eaſie to be ſeen, that this light proceeded from the fleſh of Animals newly killed.

Of Man.

THe Chymical Artiſt doth extract from Man, both male and female, ſeveral Subſtances, which are the ſubject of this work, and that either during his life, or after his death; from male and female during their life, are taken Hairs, Milk, After-burthen, Urin, Bloud, the and Stone in the Bladder: After death, uſe is made, either of the dead body, or its parts, which are muſcles or fleſh, fat, bones, or skull. From theſe ſeveral parts, is the Artiſt to take his Remedies, as we ſhall hereunder teach in order; and that will be a ſufficient example to direct him in the like operation upon other Animals and their parts. There are yet beſides theſe above related, ſeveral other parts in Animals, very uſeful for Phyſick: But, as they are not commonly made uſe of in Chymical operations, we think it needleſs to mention them in this Chapter, leſt we break the Law of our Abridgement.

Of Hair.

TO draw from Hair any ſerviceable Remedy, and loſe none of the Vertue, they muſt be diſtilled; for by this Operation is the Spirit and Oil extracted, and the Aſhes are preſerved: which is performed in this manner.

Take Hair either of male or female, as they are found in Barbers ſhops, or Periwig-makers, and fill therewith a Glaſs Retort, rather then an Earthen one, by reaſon of the ſubtilty of their Spirits, and put it in a Sand Furnace, (which for abbreviation we will call only Sand hereafter:) To this, fit exactly a convenient and large Receiver, and lute the Joynts; the Lute being dry, begin firſt to give it a moderate fire; which increaſe by degrees, till the vapours begin to fill abundantly the Recipient; and keep the Fire in this ſtate, until, the vapours being ſpent, the Retort begins to grow clear of it ſelf; then encreaſe the Fire more violently, that nothing of what may be driven out of the Retort, do remain, and the Calcination of the remainder, may perfectly be performed; then ceaſing the fire, let the Veſſels cool, and you ſhall find in the Recipient two different ſubſtances, which are the Armoniac Spirit of the Hair, and the Oil, which is nothing elſe but the ſulphurous portion of this Mixt, mingled with the groſſer part of the Volatile Salt. Theſe two Subſtances after ſeparation, may be applyed to Phyſical uſes: But it is nevertheleſs neceſſary to rectifie them before hand, *viz.* the Spirit in *B. M.* upon other Hair, cut in very ſmall pieces, in a ſmall Glaſs-Body covered with its head, and uſing all requiſite precautions; and the Oil upon its own Aſhes, in an Aſh Furnace, giving at firſt but a moderate heat.

The Spirit of Hair is not inwardly given, partly by reaſon of its ill taſte and odour, partly becauſe Art doth extract from other parts of Man, other Spirits more pleaſing, and leſs nauſeous in their uſe. This Spirit then is never uſed, but with a mixture of Honey, to anoint the parts where Hair are thin, and grow in ſmall quantity, or altogether fallen away: The Oil is ſoveraign to eradicate Tetters in what part ſoever of the Body they grow, making a Liniment of it with Salt of Saturn, and applying to the place, after a due Purgation given to the Patient fit for expelling ſeroſities. The Aſhes mixt with Mutton-ſuet in the manner of a Sear-cloth, produce wonderful effects in the cure of ſtrains, and the ſtrengthning of diſ-joynted and diſlocated parts. Add to this, that Hair unwrought, are a very preſent remedy to ſtanch running of bloud, either in wounds, bleeding of the noſe, or immoderate courſes of women.

Of Milk.

WOmans Milk of it ſelf is an excellent remedy for Eyes, to appeaſe the grief and remove inflamation, whether proceeding of ſome hurt in the ſubſtance it ſelf, or from ſmall Ulcers which happen to breed in Eye-lids and corners of the Eye: and if Womans Milk cannot be recovered, then ſome other kind is to be ſubſtituted in the place. But there is a Vitriolick Water diſtilled with Womans Milk, or ſome other, either Cows Milk, Aſs, or Goat, which may be ſtill ready at hand, and is no leſs efficacious to remove any grief from the Eye; It is thus made.

℞ Of Milk and white Vitriol pulveriſed a like quantity, put them together in a Cucurbite or Glaſs Body, fitted with all the care requiſite to Diſtillation, then extract upon the Aſh Furnace, a water *S. A.* with a graduate heat, untill the white vapours or clouds do aſcend, at which time ceaſe the fire, leſt the Water ſhould become corroſive: This Water doth correct the redneſs of the Eyes, and removes wonderfully inflamations.

Of

Of the After-burthen.

TO prepare any Remedy from the After-burthen, you muſt chuſe (if poſſible) one of the firſt birth, and a male: the Woman being of a middle age, as from 18 to 35 years, ſound, Black of Cheſ-nut hair; the Red-hair Women (as participating ſomething of Arſenical Spirits) are to be abſolutely excepted. And if the Artiſt cannot recover one of the firſt child, let him at leaſt have it of a male child: and, unleſs in abſolute neceſſity, make no uſe of a female, which only in ſuch caſe he is allowed to do: for being both male and female are nouriſhed in the ſame womb with the ſame menſtruous bloud, there is but the difference of the ſtrength and vigour, conſiderable in the choice.

Take then ſuch an After-burthen (as is ſaid) with all the conditions requiſite, put in a Glaſs Cucurbit, and diſtil in *B. M.* until the bottom be dry, and keep the Water in a Bottle well ſtopt with Cork, ſeaſoned in melted Wax; and if what is left in the bottom of the Cucurbit, be not dry enough to be reduced to Powder, dry it in a Paper doubly or trebly folded, at a moderate heat. But you are to note, that neither in diſtilling nor drying of it, it muſt not be turned upſide downwards, that the Spirit and Volatile Salt may the better concentrate themſelves, becauſe it is this Salt which properly gives vertue, to the Powder that is to be made thereof.

The Water thus extracted, is an excellent Coſmetick, ſmoothing wonderfully the skin, both of hands and face, takes away the wrinckles, and ſpots; chiefly, if you add a little Salt of Pearls and Borax. But it is morever very uſeful in expelling the After-burthen, when the delivery of the Woman hath been long and difficult, and accompanyed with weakneſs, provided you mix with this Water the weight of ʒ ß. of the Powder of the Body whence it hath been extracted, or the ſame weight of an Eels Liver dryed with its Gall, which is an approved and infallible Remedy.

The Powder given from ℈. 1. to ij. or iij. is a Soveraign Remedy againſt Epilepſie, either in its own water, or that of Pyony or *Lillium Convallium*, or Lime-tree, ſeven continual days faſting, during the decreaſe of the Moon. But if you Calcine the After-burthen in an Earthen unleaded Pot well covered and luted; the Aſhes will be a ſpecifical Remedy againſt the Kings-Evil, and Wens, exhibited in Water of male Southern-wort, the weight of ʒ ß. during the laſt quarter of the Moon, every morning faſting.

Of

Of Urine.

Though Urine be an excrement voided, and caſt away daily, it contains nevertheleſs a myſterious Salt, full of Vertues, known but to very few. The ingenious Artiſt which is acquainted with its properties, ſhall not eaſily be ſcared or diſtaſted by the name or noyſomeneſs of it: it belongs only to ſuch as boaſt of an eminent knowledge in Pharmacy and its Preparations, and dare not nevertheleſs fowl and ſully their hands in the diſquiſition and ſeparating of the different parts wherewith bodies are compounded. And to prove in general, the divers Medicinal Vertues of Urine, we ſhall only hint, that the waſhing with it, when newly voided, doth dry and heal itches and ſcab, diſſolve tumors being applyed warm, mundifies and clenſeth wounds and venemous ulcers, prevents gangreen; opens gently the body without gripings, being adminiſtred in Glyſters lukewarm; for, if it be ſuffered to cool, it loſes that Volatile Spirit wherein the chief Vertue of it doth conſiſt; hindereth, or at leaſt, leſſeneth the fits of certain Agues, if it be applyed warm to the wriſt, and in frontals: healeth the ulcerous Ears, being poured in; taketh away the redneſs and the itching of the Eyes, if it be diſtilled in the corners of them: Being mixt with Spirit of Wine, cureth the ſhaking of Limbs; and taken in the way of a Gargal, diſſipates the ſwelling and tumour of the *Uvula*; and to be ſhort, appeaſeth all the pains cauſed by vapours riſing from the Spleen, applyed in a Plaiſter-wiſe made with Aſhes. And if thus, Urin ſeemeth to be a treaſure againſt outward Diſeaſes: it is of no leſs efficacy againſt inward ones, being ſoverain in removing all obſtructions of the Liver, Spleen, Bladder and Gall, preſerving againſt the Plague, and curing Dropſie in its beginning, and removing Yellow-Jaundies: And it hath been obſerved, by ſome curious ſearchers of Nature, that the Husband's Urin in difficulty of birth is a ſpecifick remedy, to cauſe ſpeedy delivery: and experience hath taught it to be no leſs wonderful and effectual in the cure of Tertians; a good glaſs full of recently voided Urin being given in the very beginning of the Fit.

All what we have ſaid hitherto, is only to make it plain, how much more excellent and capable of producing its Effects, well prepared Urin, and ſeparated from its groſs impurity ſhall be, than when it is yet corporeal; and to prove more and more, that the chief, nay almoſt all the Vertues of mixt Bodies, do proceed from their Spirits, and Salts.

They that will make uſe of Urin in Pharmacy, or Chymical operations, muſt chuſe (if they can) that of wholeſome Bodies of young men, or children, from the age of 10. until 15. years, drinking Wine, if it may be had ſo, if not, ſuch as they can meet with, for all Urin is never without its Spirit and Salt: But in Urin of this latter ſort, they will be fewer and groſſer. Though experience hath made it manifeſt, that the ſame Remedies are found in it either to be outwardly or inwardly applyed, or to prepare the following operations.

To make the Igneous Spirit of Urin, and prepare its Volatile Salt.

Take of Urin, conditionated as we have ſaid above, thirty or forty pints, and evaporate it with gentle heat, to a conſiſtency of Syrup; put the remainder in a Glaſs-Body of about a cubit high, cover it with its Head or Limbeck well luted; and in a *B. M.* or aſhes, extract the Spirit and Volatile Salt by Diſtillation: if you work in *Balneo*, let it be boiling; if in Aſhes, give your degrees of fire with precaution. Your Spirit will be found coagulated in the Limbeck in a Volatile Salt.

But you are to obſerve, not to Evaporate your Urin, but when it is recent and new; for, if you did, after Fermentation or Digeſtion the beſt Subſtance would Evaporate away and be loſt.

The Spirit of Urin may alſo be diſtilled with a Limbeck in *B. M.* hot boiling, without Evaporation; but then it muſt be rectified.

The ſame Spirit may likewiſe be diſtilled without apparent fire, which is a wonderful operation, and thus performed; Evaporate the Urin with a gentle fire about a third part away, then having filled the bottom of a Glaſs Body with three fingers high of good unſlackt Lime, pour your Urin thereupon being thus evaporated, then cover it quickly with its head, and fit a Receiver; and thus without the help of any fire, ſhall you obtain in a ſhort time, the Spirit of Urin ſo Subtile and Volatile, as not to be any way inferiour to any drawn by another method: They that will make uſe of the open Retort of *Glauber*, ſhall more eaſily diſtil it, and in greater quantity; it is very difficult to preſerve the Volatile Salt, of Urin, by reaſon of its ſubtile nature, and the penetrability of its parts, therefore it is neceſſary to digeſt it with its own Spirit, and unite them both together, preſerving them in a Glaſs Viol of a narrow neck, and fenced with a double bladder wetted above all.

This Volatil ſaline Spirit, or ſpiritual Salt is endowed with almoſt innumerable Vertues: for, it is firſt, of a ſoverain efficacy in allaying the pain of all the parts of the body, and chiefly of joynts, when mixt with ſome convenient Liquor. It opens more then any other remedy, all tartarous obſtructions of the Mizentery and Bowels; whence it is uſed with wonderful ſucceſs in Scorbutick and Hypochondryacal Diſeaſes, to correct evil Fermentations of the Stomach, and cure the two kinds of Jaundies: it is of no leſs vertue to diſſolve and attenuate the gravel and ſlimy ſubſtance generated in the Reins or Bladder. It may alſo be made a very excellent remedy againſt Epileptical, Apoplectical, Maniacal Diſeaſes, and all other of the like nature, which are ſaid to have their root and firſt original in the Brain: but it muſt be prepared as followeth.

Take Vitriol purified by ſeveral Solutions, Filtrations, and Cryſtallizations made with diſtilled Rain, or which were yet better, Dew-water: Imbibe it with Spirit of Urine, until it only covers the matter; ſtop your Veſſel very cloſe, and put in digeſtion for eight or ten days, after which, put your matter thus digeſted in a high Glaſs Body, and diſtil it in Aſhes till dry: you ſhall have an excellent Cephalick Remedy, to cure the Megrum and all other pains in the head, even by the only ſmell; and to provoke ſleep, if it be only held a little ſpace of time under the noſe. That which remains in the bottom of your Glaſs Body or Cucurbit, muſt afterwards be put in a Retort in Sand, with its Recipient well luted, to draw the Volatile Salt thereof, and a kind of brown Oil, not to be deſpiſed both in Medicinal and Metallick Operations; you may alſo make a Diſſolution of the remainder, and by Filtration, Evaporation, and Cryſtallization bring it to a Salt, which is one of the trueſt Stomachal Remedies to expel thoſe viſcoſities and hurtful ſuperfluities which moſt commonly ſtick to the ſides of crude and ill-diſpoſed Stomacks: it muſt be given in Broth or warm Beer. The *doſis* muſt be from viij grains to xx. and even to ʒ ß. The *doſis* of the Spirit of Urine, is from xi. drops to xij. or xv. in Emulſions, Broths, or other appropriated Liquors; that of Volatile Salt from ii. grains to x. in the ſame manner as the Spirit.

To make the Water, Oil, Spirit, volatile and fixed Salt, of Humane Bloud.

TAke in the month of *May*, a good quantity of ſome young mens bloud, which they ordinarily cauſe in that ſeaſon to be let out for prevention of diſeaſes, and diſtil it in Aſhes in a large Glaſs Body; but to prevent the raiſing of it in the Head or Limbeck, put upon it two or three handful of Hemp, luting all exactly, and fitting a convenient Receiver; rule your fire accurately by proportionate degrees, and take care above all things, that the remaining Maſs after diſtillation in the bottom may not burn, but be only dryed ſufficiently. So ſhall you have Water and Spirit, which rectifie in *Balneo*: with the Water you may extract the Salt remaining in the *Caput mortuum*, after due calcination; the Spirit may be preſerved as it is, to be uſed againſt the Falling-ſickneſs, and Convulſion fits of children. The *doſis* from ʒ ß. to ʒ i. It is alſo a ſpecifick Remedy for the ſame diſeaſes, if you mix with it the Flower of Lilly-convally and Lavender, to extract the Tincture thereof. It will nevertheleſs be better, if you cohobate it in a Retort upon what did remain in the bottom of your Cucurbit, or Glaſs Body nine ſeveral times, or ſo long till it hath got a ruby colour, and that the Oil cometh at laſt with its volatile Salt, ſticking to the Neck of the Glaſs or the ſides of your Recipient; then mix it with the Spirit, and joyn them together by diſtillation in *Balneo*. This is that Spirit impregnated with its valatile Salt, ſo much cryed up for the cure of Palſie, being inwardly taken from ſix drops to ten, in Broths, or decoction of Squina-root, or in white generous Wine.

What did remain in the bottom of the Glaſs Body, muſt be calcinated with a circular fire to extract the Salt thereof, with the water that came firſt in the diſtillation, filtring, evaporating, and cryſtallizing, to preſerve for the following uſe.

Take the diſtilled Oil, and rectifie it upon Colcothar in Sand in a Retort, until you find it ſubtile and penetrative; mix the fixed Salt with your Oil, and digeſt it together, until they be perfectly united; and thus ſhall you have a wonderful Balſom, to allay the grief of Gout in hands, and feet, and remove the ſwelling and redneſs thereof: But, that which is more conſiderable, is, that this remedy ſoftens, diſſipates, and diſſolves the Chalk gathered by the Gouty humor in the Joynts, as alſo coagulations in the Joynts of Pocky Bodies, being purged before with the ordinary preparations of Mercury and Antimony.

But you muſt not ſtick ſtill at the Spring ſeaſon of the year, whereby to get your bloud; for if neceſſity doth require it, you may take it alſo in the other ſeaſons of the year; you may alſo make uſe of Goat, Swine, Neat, or Sheeps bloud, and diſtil it with the ſame Art, and in the ſame manner as humane bloud; for in perfect Animals, the natural digeſtions are performed in the ſame manner, and their bloud is endowed with the ſame vertues: only that of Man is of a ſubtiler nature, by reaſon of the delicacy of his food.

To make the Salt and Elixir of the Stone and Bladder.

IT is a wonder of Nature, that the very ſame thing which cauſes in Man ſuch extremities of torture, ſhould become to the ſame diſeaſe ſo good and certain a remedy: this is experimented in the Stone of the Bladder, which without any other preparation than being reduced to ſmall Powder, may be adminiſtred from ℈i. to ʒi. in white Wine, or decoction of Burredock Roots and red Nettles to diſſolve the Stone in the Bladder, and expel gravel and ſlime from it, and from the Kidneys: but thoſe Remedies being heightned by Chymical preparation, are much more efficacious, and do act with a much greater quickneſs.

Take then a parcel of theſe Stones, reduce them to powder, and joyn with two pints of Beach Coal pulveriſed, and thus being put in a well luted Crucible, calcine it with a circular or Reverberatory fire, the ſpace of five or ſix hours; and being cooled, grind your matter upon a Marble, and, with ſome diuretical Water make a Lye thereof; or, with Phlegm of Salt-Peter, or Allom, filtrate and evaporate till it skin; then in a cold place draw your Cryſtals, and ſo continue to do, till you have extracted all the Salt; which if you find not yet ſufficiently cleanſed, put it again in a Crucible, and let it grow red-hot in the fire without fuſion, then purifie by reiterated ſolutions, filtrations, evaporations and cryſtallizations, until you like it. You muſt keep this Salt well dryed, in a Glaſs Viol well ſtopt, leſt by the attraction of Air, it ſhould contract moiſture. The *doſis* is from iv. grains to viij. in appropriated Liquors, to facilitate the excretion of Urin, diſſolve and expel the gravel and ſlimy matter in the Reins and Bladder, which moſt commonly are the occaſional cauſe of generating the Stone.

But if you will have an Eſſence or Elixir out of it much more efficacious then this Salt, calcine the Stone with equal weight of well purified Salt-Peter in a Crucible with a circular fire, the ſpace of ſix hours; then extract the Salt from the matter calcinated, with Spirit of Wine, filtrate, evaporate, and draw your Cryſtals, and when they are well deſiccated, put them to digeſt in a double Veſſel *in Balnei vapore*, with rectified Spirit of Wine; then cover it with a head, and draw the Spirit of Wine in a gentle *Balneo*, and cohobate ſo often, till the Salt be reduced to a very ſubtile and clear Liquor, which you are choyſely to preſerve; it muſt be given from five drops to ten, for the ſame Diſeaſes, and in the ſame Liquors before mentioned.

The Artiſt muſt not ſcruple to make uſe of Nitre in the Calcination of the Stone of the Bladder, leſt its Salt ſhould joyn with the other: for, beſides that all, what is volatile, ſharp and corroſive in the Nitre, flys away in the calcination, that ſubſtance of it which remains after the Stone is calcined, can but augment the efficacy of the Remedy, then leſſen or obſtruct it, being reduced by the action of the fire to the univerſal nature.

Having thus ended to treat of thoſe things, which are extracted from Man's body during its life; we will end this Chapter by examining thoſe Subſtances which his Body may afford after death, beginning with the Fleſh, which doth furniſh us with ſeveral conſiderable preparations, as in the ſequel will appear.

Of Humane Fleſh and its Preparations.

THe Mummy which is prepared out of the Fleſh of Man, is one of the nobleſt Remedies which all the parts of his Body can afford: But, becauſe it is abhorred by ſome natures, and is neither known, nor well apprehended by others, it will not be unfit to ſay ſomething of its differences, before we come to the deſcription of its true Preparation.

Thoſe that have more learnedly writ of Mummy among the Ancients, make only four kinds of it: the firſt is the *Arabick*, which is nothing elſe but a Liquor flowing from Bodies embalmed with Myrrha, Aloes, and natural Balſom mixed and incorporated, with the fleſhy ſubſtance of embalmed bodies, containing the Spirit and volatile Salt, from which doth reſult the Mummial part, which compoſes with Myrrha, Aloes, and Balſom this firſt kind of Mummy of the Ancients, which were not to be deſpiſed, if recoverable; but none ſuch is to be found at this day.

The ſecond kind, is the *Ægyptian* Mummy, which is a Liquor thickned and dryed, proceeding from the Bodies which have been ſeaſoned and filled with a Balſom, ordinarily called *Aſphaltum*, or *Piſſaſphaltum* (a kind of Bitumen.) Now as Sulphur in natural bodies is incorruptible, ſo is it by his means and Balſamick faculty alſo, that dead bodies are preſerved againſt corruption: This ſecond kind is much inferiour to the firſt, and is only fit for outward uſes, being not capable to draw from the dead body, the vertues of the median life, which was hidden and concealed in the parts, by reaſon of the compactedneſs and cloſeneſs of parts of theſe Bituminous Sulphureous Subſtances, which are dry, crumbling, brickle.

The third kind is altogether to be laught at and rejected, being nothing elſe but an Artificial *Piſſaſphaltum*, *viz.* black Pitch mixed with Bitumen, and boiled with a Liquor iſſuing from the dead Bodies of Slaves, to give it the cadaverous ſmell; and this third ſort is uſually found in Druggers ſhops, which furniſh Apothecaries; deceived by the odour of this Drug ſophiſticated and falſified. This that I ſay, have I learned from a Jew of *Alexandria* in *Ægypt*, laughing himſelf at the credulity and ignorance of Chriſtians.

The fourth, and beſt, and leſs ſophiſticated kind, is that of Humane Bodies, dryed up in the hot Sands of *Lybia*; for it happens often, that whole Caravans are ſwallowed up in the Sands, when any contrary wind doth in an inſtant ariſe, and whirling the Sand, doth in an inſtant cover and overwhelm them unawares. I have ſaid, that this fourth kind is the beſt, becauſe it is uncompounded, and that this ſudden ſuffocation doth concentrate the Spirits in all the parts, by reaſon of the fear and ſudden ſurpriſal, which ſeizes on Travellers, according to that ſaying of *Virgil*,

Membra quatit, gelidúſque coit formidine ſanguis.

And becauſe moreover the ſudden exſiccation cauſed by the heat of the Sand, or the irradiation of the Sun, communicates unto it ſome aſtral vertue, which by any other way whatſoever cannot be performed.

They that can recover this laſt kind of Mummy, ſhall make uſe of it towards the following preparations: But, becauſe theſe dead bodies ſo dryed, are not ſtill to be recovered, and that the Remedies thereof extracted are very uſeful and neceſſary; the ingenious Artiſt may ſubſtitute a fifth kind of Mummy, *viz.* that which *Paracelſus* calleth *Mumiam Patibuli*; and which may lawfully be alſo called the Modern Mummy, which you may prepare in the following manner.

Preparation of the Modern Mummy.

TAke ſome young luſty mans body, of about 25 or 30 years of age, dead by ſuffocation or hanging, and diſſect the Muſcles without loſs of their common Membrane, and being thus ſeparated, dip in *Sp.* of Wine, and ſuſpend in a place where the air may be dry and paſs freely to and fro, that they may be ſoon deſiccated, and the volatile Salt and Spirit contained therein, may be concentrated in the fibres, the ſerous and unſerviceable part only vapouring away; and if ſo be the weather proves moiſt and rainy, theſe Muſcles muſt be hung in a Chimney, and every day aired with a ſmall fire of Juniper wood, having all its leafs and berries, until they become as dry and well ſeaſoned as the powdered Beef, which Mariners uſe for long Sea-voyages. Thus will you have a Mummy not inferiour to that of the fourth kind before deſcribed; yea in ſome regard to be more valued, becauſe we are aſſured of her preparation, and we can upon any occaſion more eaſily come by it, and that it ſeemeth that the Spirits, Volatile Salt, and the Mumial and Balſamick Subſtance, muſt by this Preparation be better preſerved, the fleſh thereof not being dryed with ſo intenſe and great a heat.

To make the modern Mumial Balſom.

TAke ℔ 1. of the fifth kind of Mummy, and bray it with a wooden Peſtle in a Mortar, until it be reduced to very thin fibres; which cut afterwards very ſmall with Cizzers, and put in a long-neckt Matraſs, pouring thereon Oil of Olives impregnated with ſpirit of Turpentine, which is properly her Æthereal Oil, until it ſwims above the matter three or four fingers high, ſeal your Glaſs Hermetically, and digeſt it in *Fimo*, or at the vapour of a hot Bath or *B. M.* in duſt of Wood, during the ſpace of a Philoſophical Month, which is a ſpace of forty days, without interruption of the heat: Then opening the Veſſel, pour your matter into a Cucurbite, and without covering put it in *Balneo M.* and ſo let all the nauſeous ſmell which it had contracted, exhale away, and all the Mummy be diſſolved; then ſtrain it through a Cotton, and let this diſſolution digeſt in *Balneo* in a double Glaſs, with equal portion of rectified Spirit of Wine, wherein you ſhall have diſſolved ℥ ii. of old Triacle, and mixed ℥ i. of Vipers fleſh in powder, during the ſpace of three weeks, at the end whereof, you ſhall take away the blind head of the double Glaſs, and cover the remaining body with a Limbeck-head, drawing away the *Sp. V.* with a very gentle heat of *Balneo*; and thus ſhall you have a moſt efficacious Balſom, uſeful both inwardly and outwardly applyed.

It is an excellent internal remedy againſt all venomous Diſeaſes, but particularly againſt Peſtilential, and all thoſe that come near their nature. It is alſo ſingular for inward bruiſes, and congealed bloud by a fall, for Palſie, contracted Limbs, and weakened by Atrophy, Pluriſie, and all other Diſeaſes which are help'd by ſweating: Therefore great heed muſt be had to cover well the Patients to whom it ſhall be exhibited. The Doſis is from ʒ i. to ʒ iii. in Broths, or Tincture of Saſſafras, or Juniper-berries.

But the vertues of it outwardly applyed, cannot enough be commended, for it is a Balſom to be preferred even to the Natural, which appeaſes all external griefs or aches proceeding from cold, or any winde or vapour ſhut up in the ſpaces that are between the Muſcles, as alſo cauſed by bruiſes and cruſhings; you may alſo anoint therewith Limbs ſtruck with Palſie, ſhrunk and contracted parts of the body, or weakened for want of nouriſhment; you may alſo rub therewith all places of the body where a pain is felt, and no ſwelling or redneſs ſeen: but you muſt obſerve, that it will be good at the ſame time, to give ſome inwardly to the patient, that the internal heat may co-operate with the external; to this end he muſt be well covered, and left to his reſt for ſome hours, to provoke ſweating, or to cauſe that which occaſioneth the grief and vice of the parts, inſenſibly to tranſpire.

How the Fat of Mans Body is to be prepared and diſtilled.

THe Fat of Mans Body, without other preparation, is of it ſelf an outward remedy very conſiderable; for it ſtrengthens the feeble parts, and diſſipates the external dryneſs, appeaſes griefs, diſſolves contractions, and reſtores to ſinewous parts their action and motion loſt, ſoftens the hardneſs of Cicatrices or Skars, fills up holes and cavities, and ſmooths the hollow places which the Small-pox leaves uſually in the skin.

The firſt preparation is common and ſimple: for it preſcribes only to cut it and boil it in White-wine, until the pieces are well criſped, and the moiſture of the Wine evaporated; then cruſh it between two Tin-plates warmed before: and ſo keep it for uſe.

The ſecond preparation is, when you intend an Anodine Ointment, cooling, and reſolving, which may very ſucceſsfully be applyed in ſwellings, inflamations, hardneſſes, and other accidents uſually happening to Wounds and Ulcers, either by the Patients own diſtemper and ill Diet, or the Chirurgeons neglect and unskilfulneſs: You muſt thus prepare it. Take Phlegm of Vitriol, or Allum, impregnated with their ſharp, ſowre ſpirit, about ℔ ß. put therein to digeſt in Sand ℥ ij. of waſhed and dryed Litharge or white Lead, ſtirring it often; and when your Liquor is well impregnated, filtrate it, and thereof make a Liniment in the form of a *Nutritum*: and if you deſire to make it more ſpecifick, add to it in the ſtirring ſome proportion of the Tincture of Myrrhe and Aloes, drawn with good Spirit of Wine.

The third and laſt preparation is the exacteſt and beſt, and is performed by diſtillation in this manner. Take 1 p. of Fat, and 2 or 3 p. of decrepitated Salt, and being well mixed and incorporated together, put it in a glaſs Retort, joyned to its Recipient, both well luted *S. A.* in a Sand-furnace, then give it a graduate fire, until the bottom of the Retort groweth red, which may be performed in the ſpace of eight hours; and thus ſhall you have an Oil of a ſubtile and penetrative nature, a ſoveraign remedy to re-animate, and take away the benumming of Paralytick Limbs, which for the moſt part are cooled and deprived of nouriſhment: better by much then the ſubſtance from whence it was extracted, to all the uſes and purpoſes which we have aſſigned it hereabove. And if you will make this Oil yet more ſubtile and penetrating, circulate it in *Balneo* with equal p. of Sp. of Wine, for the ſpace of ſome days; then rectifie and diſtil in Aſhes, in a low Glaſs body; by this means it ſhall become ſo penetrating, that ſcarce it can be preſerved in Glaſs, and becomes imperceptible as ſoon as applyed, by reaſon of its quick penetration.

Theſe Preparations already deſcribed, may be a pattern for all other kinds of Oyls, Butters, Fats, and ſuch like, which by this method may be made more efficacious and penetrateing.

To make the Spirit, Oyl, and Volatile Salt of Mans Bones and Skull.

THe preparation of the Skull, ſhall not differ from that of the Bones; wherefore we will not loſe time in makeing two ſeveral deſcriptions, the one and the other being thus wrought.

Take the Bones of a Man extinguiſhed by violent death, which neither have been buryed under ground, nor boiled, nor put in Quick-lime, and ſaw them in pieces of a convenient ſize to be put in a Retort well luted, and being filled not above the two third part: put it in a cloſe Reverberatory Furnace with open fire; and having exactly luted and fitted a Recipient to it, cover the Reverberatory, leaving only a hole of about the bigneſs of an inch and a half diameter, to be as a Regiſter for ruling the fire, which ought to be moderately graduated, until all the white ſteams be over; then change your Recipient, or empty the matter contained in the firſt, and lute it again exactly, continuing and increaſing the fire, until you drive out the Oil with a Volatile Salt and the remainder of the Spirit, which work muſt be thus purſued, until the Recipient begins to clear of it ſelf, which will happen in the ſpace of twelve hours, from the beginning of your Operation. But you muſt note, that the duſt coming out of the ſawing of the Bones, muſt be preſerved, or ſome other provided by ſcraping or filing, to be uſed in rectifying of the Spirit, Oil, or Volatile Salt. You muſt alſo calcine and reverberate with open fire to whiteneſs, between bricks, the pieces or lump remaining in your Retort, that they may ſerve in a manner to ſtay and fix the Volatile Salt, which otherwiſe, by reaſon of its ſubtile nature, cannot be preſerved: as we ſhall declare, when we come to ſpeak of the diſtillation and rectification of the Extract of Harts-horn.

I cannot here bury under ſilence an experiment wherein I was an Eye-witneſs, in the perſon of a Cornet, who had received a Musket-ſhot in the thigh, near unto the knee, and who after the wound healed, had both his leg and knee ſo ſtrangely put out of their natural poſture and ſituation, that his heel did almoſt ſtick unto the buttock, which made him uncapable of the function of his employment. But their Surgeon major, who was a *High German*, did undertake the reſtoring of his knee to its natural motion; which to effect, he adminiſtred unto him every day, for the ſpace of ſix weeks, ʒ i. of the powder of a thigh or leg-bone of a man, who ſome years before had been diſſected, in his ordinary Broths; by which he did recover not only the bending of his knee, but made him capable, before the ſix weeks ended, to Fence, play at Tennis, ride on Horſe back, and perform all other exerciſes. Whence you may note, that ſo rare a Cure could not proceed but from the volatile, ſpiritual and penetrating Salt, which this remedy did contain, ſince the material part of the bone could never paſs ſo far as the laſt digeſtions. I have quoted this hiſtory, to no other purpoſe then to perſwade the better, and lay more open to the underſtanding, the effects of thoſe remedies which are extracted from the skull and bones of Man, by diſtillation, ſeparating artificially the pure parts from impurity. The Spirit and Volatile Salt of Mans skull is given againſt Epilepſie, in water of Lime-tree flowers, Lilly-Convally, or Piony: that of bones is alſo ſucceſsfully adminiſtred, to reſtore contracted and dryed Limbs; provided you rub them alſo with Balſom of Modern Mummy: The Oil of skull and bones is only applyable outwardly, to cleanſe and heal filthy and corroding Ulcers, provided you mix a little powder of Colchotar, and every other day ply the patient with vulnerary and purgative potions. The Doſis of the Spirit is from three drops to ten, and of the Volatile Salt fixed from four grains to eight.

The manner of preparing Remedies out of Harts-horn.

ALthough we have given a method whereby to perform all Chymical Operations, in extracting remedies from the parts of Animals; yet becauſe there may be many that will be ſhie to work upon the parts or ſubſtance of Man, and that ſome Animals parts do differ from that of Man, and contain in themſelves a greater ſhare of the uſeful ſubſtance, to encounter and cure diſeaſes: I thought it neceſſary, exactly to deſcribe ſuch good remedies, as may be extracted out of Harts-horn, and lawfully ſubſtituted to thoſe which are extracted from the body of Man. For we muſt confeſs, that there is ſomething very noble, and worthy of our conſideration, in the natural production of the Stags head, which every Spring he doth renew by a kind of Vegetation: And to prove and clear this truth, it is to be noted, that the head of this noble Creature, becomes then only uſeleſs and troubleſome to him when he is grown decayed and lean; which the *French* Huntſman expreſſes by a very ſignificant Phyſical motion, *Tomber en pauvretè*, Grown poor; for their meaning is, that the Deer hath want of good and ſufficient food during the Winter ſeaſon, when the earth being long covered with ſnow, theſe poor Creatures are exhauſted of natural ſpirits, and want ſufficiency of radical moiſture, to fill up and ſhoot into their heads, having ſcarce enough to prop up and maintain their life, which makes them in that ſeaſon prove lean and languiſhing. But when the Spring, repairer of Nature, reſtores again the freſh Graſs to Valleys, and tender buds to the Copſes, they are ſo plentifully re-animated with a new fire, that the ſublimated Spirits ſhooting into the head, do provoke them by a violent itching to caſt their old head, which at that time is become ſpongious and hollow, and ſpoiled of its beſt and principal part, which is a volatile ſpiritual Salt, in which doth conſiſt all its Medicinal vertue; after which they recover a new Velvet head, ſoft in the beginning, and filled with a very ſubtile Salt; which hardens by degrees, till it hath attained to its full perfection: From whence we may gather, that it is very neceſſary to have a regard in the choice of the heads of this noble Creature; for, you muſt not take for Operations, any of the caſt heads, neither before they have attained their full and requiſite firmneſs; or when they are too near the Winter-ſeaſon: but the fitteſt time to have it in its true perfection, is between the two Feaſts of our Lady in *September*; for at this time it is ſufficiently furniſhed with Spirit, Volatile Salt, and Oil, to prepare thoſe Medicines with it, which we ſhall hereunder deſcribe: The Stag or Deer muſt be killed by the Dogs. But before we go further, it will not be from our purpoſe, to ſhew, *How the Water of Stagshead is to be diſtilled*, whileſt it is yet tender, and covered with its hair, being a Water of very great vertue, and much leſs heating then the other remedies which we ſhall deſcribe; her Spirits being but yet in their Embryo, not ſufficiently concocted and digeſted, to attain their laſt perfection.

How the Velvet head of a Stag is to be diſtilled, to have thereby the Water of the Stags-head.

Take the ſaid Velvet-head from the 15 of *May* to the end of *June*; cut it in pieces of the thickneſs of a half-fingers breadth, and place them checker-wiſe one upon another, in the bottom of a Glaſs Retort, which put in *Balneo*, and when all is ready, give fire till the Water begins to drop down, continuing that degree of heat until no more water comes out; you may afterwards put your Cucurbit in Aſhes, to extract the remaining moiſture, that the pieces being more dry, may the more eaſily be preſerved. Some do add Wine, Cinament, Mace, a little Saffron in the diſtilling, to make the Water more efficacious, chiefly to eaſe women in hard Labours, help to expel the afterburthen when they are grown weak, as alſo to cleanſe the womb from ſuch ſeroſities, as during the Child-bearing have crept in between the Membranes, cauſing with the remaining bloud, thoſe gripings wherewith women newly brought to bed are for the moſt part tormented. The induſtrious and curious Apothecary, may make it ſimple and compounded, the better to anſwer thoſe Phyſicians intentions which will be willing to employ him. The Doſis of the ſimple-water is from half a ſpoonful to two, and even to more, conſidering it is a water that ſtrengthens without altering and heating; and beſides its ſingular uſe in Child-bed, it is of no leſs efficacy in all diſeaſes where there is a touch of venom. They that will preſerve it long, muſt add to each pound weight of this water ℥ i. ß. of Borax in powder, by which it will increaſe the more its vertues for Child-births, ſince Borax it ſelf is a ſpecifick remedy to help and facilitate Delivery. The Doſis of Compounded Water muſt be leſs, for it muſt not be adminiſtred above ℥ ii. in quantity, in all malignant, and ſpotted or purpureous Feavers but chiefly in Meaſles and Small-pox it is a moſt ſoveraign Antidote.

The pieces which did remain in the bottom of the Glaſs, are not to be caſt away, but rather to be preſerved, and being beaten into very ſmall powder, uſed from ℈ ß. to ʒ ß. for killing Worms in Children, and to hinder their breeding, giving it in decoction of Scraping of Harts-horn and Ivory; this powder hath not loſt its vertue, becauſe the heat of *B. M.* is not ſtrong enough to elevate the Volatile Salt, which was incloſed in the moſt ſolid parts of theſe pieces.

A Philoſophical Preparation of Harts-horn.

Many are of opinion that Harts-horn cannot be made tender and crumbling enough to be eaſily afterwards reduced to powder, without previous Calcination; but as this way of Calcination deprives it from its Spirits and Salt, the Sons of Art have found a way of a Philoſophical Calcination, which preſerves its vertue: whereby may eaſily appear how much ancient Pharmacy doth come ſhort from that which in our days hath received the light of Chymiſtry.

Take then well-choſen Harts-horn, and gathered in its true ſeaſon; ſaw it in pieces of the length of a Pan about the ends, then putting two ſticks croſs-ways towards the top of ſuch a Glaſs Body as uſually ſerves for diſtillation of Spirits and Waters, there ſuſpend with a pack-thred pieces of the branches of the Deers head cut as before, when you are to diſtil any Cordial Waters, ſuch as of *Carduus Benedictus*, *Ulmaria*, or ſmall Centaury; or, which would yet be better, when you go about to diſtil any fermented matters, which ſend forth more penetrative and ſubtile vapours, you muſt cover the glaſs body with a Limbeck, and give the ſame degree of fire as for the diſtilling of *Aqua Vitæ* ; ſo ſhall theſe vapours penetrate into the very center of your Harts-horn, and make it as eaſie to crumble and be reduced to powder, as if calcined with open fire, and grinded upon the Porphyry : but you muſt proſecute the work of your diſtillation, four or five days, without intermiſſion or opening the Veſſel ; for which reaſon, the Glaſs Body muſt have a hole towards the upper part, placed ſide-wiſe, whereby to recruit it with warm Water proportionably as it diminiſhes by diſtillation, taking care alſo that the Liquor ſhould not come near the ſuſpended matter by half a foot. And if it be objected, that the vapours may carry along with them the moſt ſubtile Spirits of the Harts-horn : We anſwer, that it may be ſo, and that theſe cordial and ſudorifick Waters, whether diſtilled Spirits of fermented Juniper, or Elder-berries, do thereby contract a greater vertue : but that this vaporous heat is not ſufficient to carry along with it the Volatile Salt, incloſed up in the matter by the ſtrict bond and union it hath with the Oil or Sulphur, which cannot be diſunited but by a much more violent heat. Harts-horn thus prepared, is much better then that which did remain in the foregoing diſtillation, as much to ſtrengthen and provoke ſweat, as to give to Children againſt Worms, and hinders all thoſe corruptions which breed for the moſt part in their tender ſtomacks. The Doſis is from ℈ ß. to ʒ ß. and ℈ ii. in cordial and ſudorifick Waters, or in ſome ſpecifick Conſerve, againſt all Peſtilential and Venemous Diſeaſes.

How to prepare the Spirit, Oil, and Volatile Salt of Harts-horn.

TAke of Harts-horn with its requiſite conditions, as much as you think fit, ſaw it by round pieces of the thickneſs of two Crowns, fill with it a Glaſs Cucurbit or Retort well Luted, and put it in a cloſe Reverberatory to open fire, which graduate until the drops begin to follow one another in the Recipient well Luted with a wet Bladder, and fall not faſter then you may reckon Four between the interval of each drop falling ; then continue and direct the fire upon the ſame equality and rule, until the drops begin to ceaſe ; then remove your Receiver, and empty it, then put it again, and lute it with good ſalted Lute *S. A.* and encreaſe the fire by a degree, until the Oil doth begin to diſtil, with ſome little remainder of the Spirit, and the Volatile Salt will gather it ſelf by degrees, and ſtick to the neck of the Retort, and thence paſs in the form of a Vapour in the body of the Recipient, where it ſhall ſtick to the ſide in the figure and form of Stags-horns, and branches of Trees, when they are loaden with hoar-froſt, or ſnow; which is an Operation very pleaſing to the ſight; for, of this Volatile Salt ſome part alſo under the ſhape of ſnow, doth fall into the bottom of the Recipient, and joyns it ſelf to the Spirit which is under the Oil. Then continue the laſt degree of fire, until nothing more cometh out, and the Recipient begins to appear without vapours.

But it is not enough to have extracted out of Harts horn theſe ſeveral Subſtances, but the Artiſt muſt be taught beſides how to rectifie them, both to take away as much as is poſſible the *Empyreuma* thereof as to ſeparate its groſsneſs; And to begin with the firſt extracted Subſtance, which is the Spirit, it muſt be rectified in Aſhes, with gentle and ſoft fire, in a Glaſs Retort, wherein you have put ſawings or ſcrapings of Harts-horn three or four fingers high, and ſo ſhall the Spirit come forth fair, clear, depurated and deprived of the greateſt part of its ill odour: The firſt drawn is to be preferred to the laſt; becauſe it is a Volatile Spirit, whoſe nature it is to aſcend firſt ſtill; the remainder muſt be caſt away, as unuſeful and unſerviceable, but the rectified Spirit is to be choycely kept in a Glaſs Viol of a narrow neck, very well ſtopt.

Doſ. gt vj
ad xij

It is an excellent remedy either inwardly or outwardly applyed: for it purifies and cleanſes the whole maſs of the Bloud, of its ſerous ſuperfluities by Urines, and by Sweat, as alſo by inſenſible Tranſpiration; therefore it is a true Specifick againſt Scurvey, the Pox, and all other Diſeaſes proceeding from alteration of bloud. Finally, this Volatile Spirit may worthily be ſubſtituted to that which is or may be extracted from all the parts of other Animals, and to be an excellent remedy to all the ſame purpoſes as the others formerly mentioned. But outwardly applyed, it is alſo of a marvailous uſe; for it cleanſes wonderfully all malignant, corroſive, cancerous, or fiſtulous Ulcers, if they be waſhed with it, or if it be injected with a Springe. It ſerves alſo for freſh wounds, cauſed either by fire, ſword, or otherwiſe, preventing all dangerous accidents; it is friendly to Nature, and helps her to the re-union of ſeparated parts, whoſe intention being not to cauſe ſuppuration, or a colliquation of the fleſh and adjacent parts, ſo doth this Spirit hinder the ſame: But note alſo, that you muſt give it inwardly at the ſame time, from ſix drops to twelve, in vulnerary potions, or the Patients ordinary drink. To be ſhort, this Spirit is nothing elſe but a Volatile Salt turned to Liquor, as the Volatile Salt reciprocally a Spirit compacted and condenſated; whence it comes to paſs, that they may indifferently be adminiſtred to the ſame purpoſe, except that the Doſis of the Volatile Salt, muſt be ſomething leſs then that of the Spirit; ſo that the vertues attributed to the one, may be ſaid alſo to be proper to the other.

We have no other obſervation to impart, for the rectifying of the Volatile Salt and Oil, but that the Operation muſt be performed in a Retort, upon ſcrapings of Harts-horn, and with the ſame circumſtances for regulating the fire. So ſhall you have a fair, clear, and Ruby-red Oil, ſwimming over the Volatile Salt paſſed into the Recipient, or ſublimated to the neck of the Glaſs, the Salt muſt be diſſolved with its proper rectified Spirit, by a diſſolution made in the vapourous heat of lukewarm water, to ſeparate it from the Oil: This diſſolution is to be filtrated through Paper, which muſt be moiſtned by the Spirit before you pour any thing into it, and you ſhall have the Oil by it ſelf, and the Salt in its proper Spirit, which thereby is ſo much bettered, and keeps thus better then alone, unleſs it be ſtayed and fixed, as we ſhall direct to do hereafter. To this end put the diſſolution of the Salt and Spirit in a Cucurbit in *Balneo* to diſtil again the Spirit, and ſublimate the Salt in the head, or if you pleaſe in a Retort: It is almoſt impoſſible to preſerve this Salt, ſo penetrative and ſubtile it is, therefore it muſt be ſtayed in the following manner. Take the round pieces which were left in the bottom, after the diſtillation performed, being very black, calcine them in open fire to whiteneſs, reduce one part to powder, which mix with equal weight of its Volatile Salt, and ſublime together, and ſo begin afreſh with new Harts-horn calcined to whiteneſs re-iterating four or five times, and thus ſhall you have a volatile Salt fixed, which you may keep, tranſport or ſend with leſs danger then the Spirit: nevertheleſs, it is my counſel to uſe rather Spirit, filled, and as it were ſaturated with volatile Salt, to all the ends and purpoſes to be declared hereafter.

This Remedy might truly be called a *Panacea*, or *Univerſal Medicine*, conſidering the wonderful effects it is apt to produce; for it is ſoveraign againſt Epilepſie, Apoplexy, Lethargy, and generally againſt all Diſeaſes, whoſe ſpring and original is aſcribed unto the Brain: It takes away all obſtructions of Liver, Spleen, Meſentery, and Pancreas; reſiſts all Venoms, Peſtilence, and all kinds of Fevers, or anguiſh diſtempers, none excepted. It cleanſes the Kidneys and Bladder from all ſlimy ſubſtances, which are the cauſe and original of Stones; corrects all defects of the Ventricle, and peculiarly indigeſtions, which occaſions an ill breath: it is a ſpecifical remedy for the Lungs, if it be digeſted with the Milk of Sulphur. It allays the immoderate looſe-looſneſs of the Belly, and the womans purgations, becauſe it evacuates ſuperfluous ſeroſities, which are the cauſe thereof: but, that which ſeemeth more inconceivable and wonderful, is, that it opens alſo the Belly when bound, and provokes Monthly Purgations, reſtoring all the functions of Nature in their former eſtate, and removes all groſs and terreſtrious matters, which did hinder their effect. I make no doubt, but I ſhall appear ridiculous to all them which do not underſtand the ſphere of activity of Volatile Salts: but I know likewiſe, that thoſe who know with me, that this Salt is the laſt cover, and cloak as it were, of Spirit and Light, ſhall not find it ſtrange, that I ſhould attribute ſo many noble effects, to this admirable Remedy. But I will yet unfold and open more this Myſtery, as much as lies in me, by a deſcription of what daily is done in our Kitchings, in the preparation of meats, both for healthy and ſick people. Is it not unknown to all, that no Cook can make either a Bisk or good Bagon, without making uſe of the Broth, gravy, and juices of the beſt kinds of meat; now it is only by their Volatile Salt, variouſly diſpoſed and mixt, that the pleaſure and tickling which affects our taſte, is communicated to the Palate. Are there not alſo Jelleys, ſtrong Broths, and Juices of boiled Meats prepared for the ſick, whereof the material and earthly dregs and ſuperfluities are thrown away, being deprived of that Salt, which remains in the Jelleys; and is the only principle of congelation: they are exhibited to weak and craſie bodies, that their Stomack might ſooner turn theſe aliments to the ſubſtance of the parts by the eaſineſs of digeſtion. The ſame doth our Artiſt in the preparation of the Volatile Salts, which are capable to ſhow ſuddenly their Vertues, in that they ſoon penetrate all the parts of our bodies, and carry along with them that wonderful efficacy which we have attributed them. And do we not ſee, that both the ancient and modern Phyſick, hath ever preſcribed Harts-horn as a neceſſary ingredient amongſt her Cordials, hath in very great eſteem the bone of a Stags-heart, and that the ſhops daily prepare Harts-horn Jelly, rather to ſtrengthen the Patient, then to nouriſh him. But we leave all this to the Touch-ſtone of Experience, which is the true ground of all our fore-going Ratiocinations.

To make the Tincture of the Volatile Salt of Harts-horn.

TAke the Volatile Salt rectified, and put it in a double Glaſs, or Blind-head, which would yet be better in a Pelican; pour on twice the weight of it of Alkool of Wine, and ſo let it ſtand twelve or fifteen days, in extraction and digeſtion together, in the gentle heat of a vaporous Bath; and if all the Salt was not diſſolved, draw off what is already tincted by inclination, and pour on new Alkool to perfect the extraction and diſſolution. So ſhall you have a Tincture much more exalted then the preceding Remedies, fit for all the uſes we have already mentioned; and moreover, a moſt rare Remedy, and of very preſent help and efficacy in Apoplexies; by reaſon of its ſubtilty which is ſo great, that it can ſcarce be preſerved in the beſt ſtopt and cloſeſt Vials.

The ſame may be done with the Volatile Salt ſtayed, and as it were fixed, but it will not all diſſolve, neither ſhall its tincture be of that penetration and efficacy; but it will be much more pleaſing, and deprived of the nauſeous ſmell: The *doſis* of the firſt is from iij. drops to viij. or ix; and of the ſecond from vi. drops to xij.

The way how to make the Elixir of Proprietatum, *with the Spirit of Harts-horn.*

AFter that we have made ſeveral Experiments of the wonderful vertues of this great Remedy, which *Paracelſus* calls by Excellence *Elixir proprietatis* in the ſingular number, nevertheleſs we thought good to Entitle it *Elixir Proprietatum* in the plural; ſince it is very true, that it doth poſſeſs them without number, and particularly that which I have made ſince I am in *England*, where I did make uſe of the rectified Spirit of Harts-horn, charged and ſaturated with its volatil Salt, inſtead of that Oil or ſpirit of Brimſtone as followeth.

Take of very good Saffron, of the fineſt Socotrin Aloes, and of the beſt chooſed and new Myrrh, of each of theſe three Balſamick things three ounces: cut the Saffron very ſmall, and powder the two others very fine, put them all in a Boult-head with a long neck being large, of two inches diameter. Pour upon x ounces of Rectified ſpirit of Harts-horn charged with its volatil Salt, as much as it is able to diſſolve, and xx ounces of ſpirit of Wine Alkoholiſated upon the Salt of Tartar, ſtop your Veſſel exactly with a Circulatory Veſſel, and lute it with ſome white of Egg and Flour, and a wet Bladder upon, put that to the vapour of the *Balneum Mariæ* a little more then luke-warm, and digeſt it during three natural days: The fourth day take of the Circulatory Veſſel, and fit a head-glaſs proportionated to the neck of the Boults-head, lute the joynts very carefully, appropriate a Receiver to the neck, and draw of it ſlowly about 15 ounces of the Liquor, and if the Salt volatil is ſublimed into the head, diſſolve it with the ſtilled ſpirit, pour again upon all the Liquor into the Matraſs, and digeſt it again three days, ſtill again until you get xx ounces, that you muſt put again upon your Matters in digeſtion for three days more for the laſt time, which being done, leave it till it be cold, and then filtrate your *Elixir* through the Cotton in a cover'd Funnel that be placed upon a Glaſs with a narrow neck, to hinder it to fly away, and ſo keep it for the uſe in the ſame Glaſs well ſtopp'd.

It is without Exageration that we may impute to this Noble and great Remedy ſome vertues and faculties, that I may aſſert to be renewing; for the Saffron, the Aloe, and the Myrrhe extracted and exalted by the Salt volatil of the Harts-horn, and by the ſpirit of Wine Alkoholiſated upon the Salt of Tartar, cannot but produce very good effects as well for the Conſervation, as for the Reſtoration. Therefore this Remedy is Excellent in the Diſeaſes which alter the Maſs of the bloud, *viz.* in the Scurvy, the Yellow Jaundiſe, and the green Sickneſs: In all the obſtructions of the body againſt the Palſie, the contractions of ſinews and Atrophies: but chiefly it is without equal againſt all the Irregularities and Meteoriſms both of the Womb and Spleen. It is to be taken faſting in white Wine, the Doſe of it is from five drops to thirty, you may Breakfaſt two hours after.

The Tincture of the Wood of Saſſafras.

I Have found out by a daily Experience, that the Tincture of this Wood doth work with much efficacy, and that it hath even ſo much, not to ſay more vertue then its ſpirituous Water: Therefore I thought my ſelf obliged to inſert it here, to the end that it might be profitable to every body, as well in general as in particular; being ſo that all are not able to ſtill that Noble Wood, nor are they furniſhed with ſuch Veſſels and Furnaces as are fit for that purpoſe. It is to be made as followeth.

Take two ounces of ſhaving of good Saſſafras, put them into a bottle, add to it a dram of Mace, two drams of Cinnamon, and three drams of Salt of Tartar, according to *Sennertus*, whoſe deſcription is in the Chapter of the Wine, and of its parts, then pour upon three pints of Rheniſh Wine, or of any other good White Wine, ſtop the bottle very well, and leave it during two natural days, that the extraction might be well made. When you have in mind to make uſe of it, you muſt ſtrain in ſome quantity of it through the cloth or the bag, the Doſe of it is from one ounce to ſix and eight; you may uſe this Tincture againſt all the ſymptoms that I have ſaid the ſpirit was good for: but it is particularly to be uſed in the Cachectick diſtempers, in which the Steel is given in ſubſtance or prepared, as in the Yellow Jaundiſe, in the green Sickneſs, in the obſtructions of the Belly, and of its parts: and alſo in the beginning of the ſeveral ſorts of Dropſies.

Of the Sponge, and of its Chymical Preparation.

WE place the Sponge betwixt the Animals and Vegetables, becauſe it partaketh of both, ſince it hath a kind of active faculty, that it doth dilate it ſelf and ſhrinks up together when it is in the Sea where it enjoyeth a tenebrous life, that cometh to that of the Animal, and that of the Plant; ſo that it may be lawfully called *Zoophyton*, or *Plantanimal*. We ſhall prove what we bring forth by the diſtillation of the Sponge, that will furniſh us with a Spirit, an Oil, and a volatil Salt of the ſame taſte, the ſame ſmell, the ſame colour, and the ſame figure as that which we draw out of the Animals and their parts.

The way how to ſtill the Sponge.

TAke ſo much Sponge as you pleaſe, cut them very ſmall with Cizzers, put them into a Glaſs Retort, that you muſt place in the cloſe Reverberatory, fit up the Receiver, and lute it very exactly, give the fire by degrees: as for the diſtillation of the Tartar that you are to continue, increaſing it little by little, until the white and oily clouds begin to come: and that you ſhall ſee that the volatil Salt doth ſublime and ſtick to the inſides of the Receiver, continue the fire with the ſame degree as long as it will laſt ſo, and when the Receiver ſhall become clear of it ſelf, it is an evident ſign that nothing elſe is to come. Therefore you muſt ceaſe the fire, and when all ſhall be cold, you muſt take away the Veſſels, and draw out the Spirit and the volatil Salt together, and ſeparate the Oil by the Funnel, or with ſome Cotton, and put it by it ſelf in a Glaſs: Put the Spirit and the Salt into a low Glaſs Body, and rectifie them in the ſand, and keep them together; keep alſo in a box the Sponge calcin'd, which is remained in the bottom of the Retort after the diſtillation, becauſe it hath alſo its uſes in the Practice. It is not to be doubted that the Spirit, the volatil Salt, and the Oil of Sponges be not Excellent to open, to thin, and to reſolve ſince they are very ſharp: Therefore you may much more reaſonably imploy them for the reſolution of the Broncoceles or big throats, then the Sponge meerly calcined or dryed and powdered. But to joyn all together, you may uſe all for the cure of that diſtemper. Firſt then you muſt Purge the ſick body with ſome *Reſina Jalappa*, and Scamony: After that you muſt make ſome Lozanges with four ounces of Sugar finely powdered, with two drams of Sponges calcin'd by the diſtillation, three drams of Steel Aſtringent, and a dram of Long-Pepper: you muſt bring all up to a maſs, and make of it ſome Lozanges of the weight of two drams and a half, that you ſhall put in a convenient place to dry. The Patient is to take one every day in the morning faſting, and give him to drink upon a little glaſs of Red new Wine, in which you muſt put from ten to xx drops of the Spirit of Sponges, impregnated with its volatil Salt, that ſame is to be followed on three or four weeks: and you ſhall ſee very evidently decreaſe thoſe hogly and troubleſome tumours, that you muſt rub night and morning with an Ointment made with ſome Oil of Laurel, and ſome drops of the Still Oil of Sponges, and keep them covered with a Plaiſter made with the *Oxycroceum*: and chiefly take heed, that the cold Air might not touch thoſe parts, and have a great care that the Patient be well ruled in his body; if not, you muſt give him every other day half a dram of *Extr. Rudii* form'd in Pills.

Of the Preparations made out of Vipers.

WE ſhall cloſe this Chapter of the Chymical Preparations of Animals, by examining the ſeveral Remedies which Vipers do afford by the help of Chymiſtry: for this Reptile is endowed with a very ſubtile and efficacious Volatile Salt for the cure of ſeveral obſtinate diſeaſes. *Galen* doth make ſeveral relations of leprous bodies cured by the only drinking of Wine wherein Vipers had been ſuffocated. *Cardan* doth alſo prove the ſame truth, in a conſultation which he ſent to *John* Archbiſhop of St. *Andrews* in *Scotland* containing this ſenſe. I will declare you a very great ſecret for the cure of Conſumptive bodies, leprous, and corroded with Pox, *&c.* which fattens and reſtores them againſt all hope. Take a well choſen Viper, cut off the head and tail, pull off the skin, throw away the entrails, and preſerve the Fat by it ſelf: cut it in bits as you would do an Eel, and ſod it in a ſufficient quantity of Water, with Benjeethin and Salt, adding towards the end ſome few Parſley leafs: being well ſodden, ſtrain the Broth, and in that Broth boil a Pullet, and give every morning to the Patient Bread that hath been dipt in that Broth, and let him eat the Pullet: Continue thus ſeven days together; but keep the Patient either in a Stove or a very warm Room during the time, and anoint him with the Vipers fat all along the back-bone and other joynts of the body, as alſo the arteries of the feet, hands, and breſt. This way are the Ulcers of the Lungs cured, for they are driven to the ſurface of the Skin in the form of Puſtula's and other eruptions. *Quercetan* doth alſo ſpeak very advantagiouſly of Vipers in his Dogmatical Pharmacy. Several other Authors have followed theſe two: but we muſt acknowledge here, that they have all ſtumbled againſt the ſame rock, holding the Viper to be venemous either wholly in it ſelf, or at leaſt in ſome parts.

But the Experiment related by *Galen*, muſt confound this opinion of the Ancient and Modern Authors, ſince that Viper was whole and alive, when ſuffocated in the Wine which did cure his Leprouſie. The *Engliſh* Ladies herein ſhame the vulgar of Phyſicians themſelves, making no ſcruple to drink of that Wine, wherein living and intire Vipers have been ſuffocated, to keep themſelves in their plumpneſs. Sound diſpoſition of Body, and quickneſs of Spirits, hinder the injury of wrinckles, and preſerve their flying beauty. But that which is yet more remarkable in this particular, is, that the *Italian Curteſana's* preſerve themſelves againſt the Venerian diſeaſe, and its ſad accidents, taking every Spring and fall, Broths, made of Pullets, Vipers fleſh, and China root. None amongſt our Modern Phyſicians, but the famous *Poterius*, and the moſt learned and ſubtil Philoſopher *Van Helmont*, have well explained wherein the poyſon of Vipers doth conſiſt; which is only placed in the ſting of choler, which prints in the imagination of that Animal an envenomed Idea.

Fabritius Hildanus, and many other grave and renowned Authors, do by their obſervations authoriſe the truth of the effects; but the two quoted only have taught us the true ſeat of poyſon, which cannot be but in the Spirit of the Animals life; as the *Italian* Proverb hints very well; which ſaith, that *Morta la Beſtia, morto il veleno*, ſince Man it ſelf, Dogs, Horſes, Wolfs, Cats, Pole-cats, *&c.* leave no venemous impreſſion by their bitings, but when they are angered, and their Imagination poyſoned with a deſire of rage and vengeance.

And let this hint ſuffice by the by, to prove more and more, that all the Vertue of things is placed in the Spirits and Life, which are nothing elſe but a portion of the Univerſal Spirit, and corporified light. We come now to the Preparations made of Vipers, and of their parts.

The manner of Deſiccating Vipers, to make the Powder and Trochisks thereof.

THe election of Vipers doth only conſiſt in taking them after they have forſaken their holes, and are more full and fed; the regard of their ſex is indifferent, provided the female is not big with young ones: they are to be choſen in high elevated and dry places, leaving them that breed about Ponds, or Moriſh and watery places.

Take of theſe Vipers as much as you pleaſe, pull off the skin and the entrails, keeping the Heart and Liver; then put them in a large Glaſs Body or Cucurbit, where you may have ſufficient room to place and order them upon ſmall ſticks, that they may not touch one the other: place your Glaſs with a Head in *Balneo*, and ſo deſiccate your Vipers; having firſt ſtrewed over a little Nitre very pure, or Flowers of Salt Armoniack; preſerve the Water which ſhall iſſue forth from it, for ſuch uſes as we ſhall hint hereafter. *Nota*, that every 12. hours your Vipers muſt be turned in the Glaſs, that they may dry equally.

Thus ſhall you have a matter to make the true Powder of Vipers, not full of thrids or filaments, which may be adminiſtred in its own Water, or in Wine, or Cinamon, or Saſſafras Water from ℈i. to ʒi. in all Fevers, but particularly in peſtilential and contagious ones, and in the Plague it ſelf, as alſo againſt Epilepſie and Apoplexy: but the other following Preparations are preferrable to this Powder.

But if you will prepare Trochisks, take other Vipers, and pulling off their skins and entrails, cut them in pieces, and boil them in the water, which you did preſerve in the preceding diſtillation, in a hot boiling *Balneo*, in a Glaſs Body covered with its Head, until this Broth comes to be of the conſiſtency of a Jelly: with this Jelley beat in a Marble Mortar the Vipers Powder, and reduce it to a Paſte, which you ſhall frame in Trochisks or ſmall rolls, having anointed your hands with Peruvian Balſom, Oil of Cloves and Nutmegs made by expreſſion: Thoſe that will rightly prepare Triacle, may make uſe of theſe Trochisks inſtead of them which the ancient Diſpenſatories do preſcribe,

ſcribe, which are only crumbs of Bread, and Vipers Fleſh deſtituted of all the faculties, which reſide in their Volatile Salt. The Powder of theſe Trochisks is preferrable to the ſingle Powder, becauſe they are impregnated with the proper ſubſtance and vertue of the Animal, beſides that they are leſs apt to corrupt then the Powder. The *doſis* is from ℈ ß to ℈ ij. in the Waters above-mentioned.

How the Spirit, Oil, volatile Salt, volatile fixed Salt, ſublimation of that Salt, and the fixed Salt of Vipers, is to be prepared.

I Shoud be unjuſt to attribute unto my ſelf the manner and invention of all theſe Operations, ſince the glory is lawfully due to the learned *Zwelpherus*, Phyſician to his Imperial Majeſty, yet living, who by his accurate learned and judicious Notes, upon the *Auſpurgian Pharmacy*, hath purchaſed to himſelf an Immortal name; having corrected the defects of the ancient and modern *Pharmacy*, with ſo clear a judgment, and ſo uncontrollable and confirmed an experience, that all thoſe which will follow the operations of the nobleſt *Pharmacy*, muſt ever acknowledge themſelves his debtors.

I will only hint, in the way, that the invention of Volatiliſing again the volatile Salt of Vipers is mine, after it hath been as it were fixed by an acid ſubſtance. And as this gallant man hath been pleaſed to make his Experiments become publick, thereby to oblige Poſterity; ſo would I not conceal the ſecret of this operation, ſince thereby a great benefit may accrew to poor diſeaſed bodies, although the invention of it be not vulgar, and does particularly belong to my diſcovery.

Take well fed Vipers without diſtinction of ſex, pull out the Entrails, and ſeparate the Heart and Liver, dry them in a Stove or Oven, moderately heated, and being thus very well dryed, beat into groſs Powder, and fill therewith a Glaſs Retort, which put in a cloſe Reverberatory, upon the cover of an Earthen Pot turned up-ſide down, upon which put two handful of Aſhes or Sand, to fence the Retort inſtead of lute, and hinder the firſt brunt and violence of fire; then cover your Reverberatory, and fit a capacious Receiver to the Neck of the Retort, and give a graduate fire, until the Retort grows red, and the Recipient cleareth during the violence of the fire, which is an evident token that all the vapours are diſperſt, that is done in leſs then 12. hours. When all is cooled again, you ſhall find three different Subſtances in your Receiver, which are the Phlegm and Spirit mixt together; the Oil black and ſtinking, and the volatile Salt ſticking to the ſides of it. The volatile Salt which is about the ſides, muſt be diſſolved with the ſpirituous Liquor in the bottom, then muſt this Liquor be ſeparated from its Oil by filtration, put afterwards the Liquor impregnated with Volatile Salt, in a high Cucurbit or Glaſs Body covered with its Head, and exactly luted in the Joynts, and adapt to it a ſmall Matraſs for Recipient, then put your Glaſs in a Sand or Aſh Furnace, and regulate well the fire, leſt the bitter and ſtinking Water, which hath diſſolved the volatile Salt aſcend within: the ſublimation being ended, ſeparate the Salt curiouſly, and preſerve it in a Viol ſtopt with Cork dipt in melted Wax, upon which pour a little of melted Brimſtone, if you will preſerve this Salt, otherwiſe it will vaniſh in a ſhort time, by reaſon of the ſubtile and penetrating nature of its volatile and aerial ſubſtance. It is this volatile Salt that poſſeſſeth ſo many rare vertues and wonderful effects; for it hinders all corruptions which uſe to breed in us, opens all obſtructions of the humane body; diſſolves and carrys away all aguiſh diſtempers, and particularly the Quartane, being exhibited from 6. to 10. grains in Saſſafras, Juniper, or Elder Water, one or two hours before the Fit: it is moreover given in the Plague, and all other contagious Diſeaſes, in Emulſions made of Columbine, Radiſh, *Carduus Benedictus* ſeed, to which are joyned Amands, Kernels of Pine-Aples, Sugar, and a little Roſe or Cinamon Water. It is alſo ſingular againſt Epilepſie and Apoplexy: for it ſearches into the deepeſt parts of the bones and marrows; it is to be exhibited in Emulſions made of Water of Lilly Convally, Piony Flowers, Lime-tree, Piony-ſeeds, Almonds, Kernels of Cherries, Peaches or Apricots. The *doſis* is ever from vi. to xij. grains.

But becauſe this Salt is of a very unpleaſant ſmell, and unſavoury taſte, Artiſts have been long about ſeeking the means how to deſpoil it of theſe two qualities, as alſo the Salt of Urine, Yellow Amber, Harts-horn, and of the parts of man: but hitherto, none hath attained to this skill and perfection, without depriving theſe volatile Salts of their ſubtilty, and by conſequence, their penetrating and diaphoretick vertue. The learned and experienced *Zwelferus* hath well attained the Art of this uſeful and curious operation, after he had tryed firſt without ſucceſs ſeveral other different ways. But the *doſis* of this Salt given in a larger proportion, ſhows enough, that this purification doth fix it in a manner; and that although it be fixed, and more pleaſant to the taſte, it is notwithſtanding of leſs efficacy. And as this great and charitable Phyſician provokes the ſons of Art, to impart their Inventions, to render it again more volatile, and take away that acidity that fixes it: I ſhall add to that Preparation, which we owe to his free communication, that which my own Induſtry and the ſtudy of natural things have taught me.

How Volatile Salts are to be ſtayed, fixed, and purified.

TAke ſuch volatile Salt as you think fitting, put ℥iiij. thereof in a high Cucurbit, which cover with its Head, on the top whereof let there be a hole of the bigneſs of a Gooſe-quil, lute exactly the Joynts, and put in the ſaid hole a fitting Quill, ſtopt with *Spaniſh* Wax, or Gum-lack; then fit a ſmall Recipient to the Limbeck, and ſoftly pour by drops of very well rectified Spirit of Salt, upon your volatile Salt which is to be wrought upon, and continue thus, until the noiſe and ſtrife between the ſharp Spirit and volatile ſulphureous Salt be over, then ſhall you perceive an union made of theſe two ſeveral Subſtances converted into Liquor; which if it appears to be impure, muſt be filtrated, if not, ſtop only the hole in the Limbecks Head with a Glaſs ſtopple, covered with a Bladder dipt in white of Eggs: then fit your Veſſel again in *Balneo*, and draw off the moiſture, till but two parts remain, if ſo be you would have your Salt cryſtallized; if not, draw all the moiſture from it, and you ſhall find ℥iiij. of Salt, fixed in a manner in the bottom of the Cucurbit or Glaſs Body, and if you have noted the weight of your Spirit of Salt, you ſhall find as much of taſtleſs Liquor, and full of *Empyreuma* in the Recipient. The Salt hath a fragrancy and very good ſmell, a ſharp ſavour, and a Saline taſte: The *doſis* of which is to be from ℈ß. to ʒi. It hath a vertue that penetrates to the remoteſt parts from the firſt digeſtion, without any alteration, purifies the bloud, and diſſolves all excrementitious matters, which ſeem already to have incorporated themſelves with our parts, but chiefly in gouty Bodies: it expels Urine, Sand, Gravel and viſcous humours from the Kidneys and Bladder, evacuates all matters by which melancholick affections are generated, reſiſts better then any other Remedy to Putrefaction, opens all manner of Obſtructions, cures all kinds of Agues, is the true preſervative and curer of the Plague; and, to end in a word, the remainder of its vertues, blots out and takes away all the ill Ideas and Impreſſions, which have imparted their character to the Spirit of Life, the true ſeat of Health and Sickneſs: The *doſis* may alſo be augmented or diminiſhed, according to the age, ſtrength, and nature of the diſeaſed and diſeaſe. But as *Zwelpherus* hath been acquainted with the way of fixing the volatile Salt, by the help of an acid to take away its evil taſt and ſmell, we will now declare the manner to draw off again this acid, and ſublime the volatile Salt, reſtoring it to its firſt ſubtile nature, and encreaſing by conſequence its penetrating vertue, without contracting any evil ſavour or ſmell.

The manner of ſubliming again the Volatile fixed Salt.

TAke ℥ iv. of volatile fixed, and mix it with ℥ i. of Salt of Tartar, made by calcination, and well purified; put them in a ſmall Glaſs-body in Aſhes; cover the ſame with a fitting Head, and fit to it a Recipient, if the Head hath a Limbeck, (for if it be a blind Head, there is no need of it:) lute exactly the Joynts, and give a graduate fire, until the ſublimation be ended: ſo ſhall you have the moſt ſubtile volatile Salt that may be found in Nature, and which hath a perfect analogy and peculiar ſympathy with our ſpirits, which are the ſubject of our natural heat, and radical moiſture. But note by the by, that *all Alkalies have this propriety to kill acids,* and never to prejudice volatile ſubſtances. The *doſis* of this Salt can be but from ij. grains to viij. by reaſon of its great ſubtilty, which is ſo penetrating, as it cannot be preſerved, unleſs mixed with its own Liquor, or being reduced into Eſſence, which preparation ſhall be taught hereafter. It is good for all the diſeaſes above related, but principally, that of Hartshorn and Vipers, which ought to be conſidered as one of the Keys of Phyſick.

How the Eſſence of Vipers, with their true volatile Salt is to be prepared.

TAke about 50. or 60. Hearts and Livers of Vipers, dryed in the manner above related; beat them to Powder, and put in a double Glaſs, pouring upon Alkool of Wine, until it ſwims ſix inches above the matter; then having covered your Glaſs, and luted it exactly, put it in a moiſt vaporous Bath, to digeſt with a fitting heat three or four days, to extract all the vertue thereof: that done, put all in a Glaſs-body in *Balneo M.* and with a ſlow heat diſtil the Spirit, cohobating three times, at the fourth diſtil all off to the dry bottom; put in every pound of this Spirit ℥ i ß. of the true volatile Salt of Vipers, ʒ i. Amber-grice eſſenſified, as we ſhall deſcribe it hereafter, ʒß. of Oil of Cinament, and as much of the true Eſſence of the external and freſh rind of Limon; put all theſe ſubſtances together in a Pelican, to circulate the ſpace of 8. days; after which, put it up carefully in Glaſs Vials, as it becomes ſo precious a Remedy, and ſtop it with all requiſite care. All the vertues which we have attributed to the volatile Salt alone, may lawfully be attributed to this noble Remedy; it hath even this advantage over and above, that it may eaſier be preſerved then the volatile Salt; and moreover, it is one of the beſt and ſecureſt Antidotes in the world, worthy of the cloſets of greateſt Princes. The *doſis* is from ℈ß. to ℈ i. in Wine, Broth, or other convenient Liquors.

The manner how to make the ſimple Theriacal Salt, impregnated with the Alexiterial and Confortative Vertue of Vipers.

THe Ancients, and *Quercetanus* after them, have ſpoken of theſe Salts, and made a particular account thereof: but the ancient way of preparation, and the correction of it made by this famous Phyſician, are rather to be pitied then imitated, though he ought not to paſs without praiſe and commendation, for having excelled in his age, and endeavoured to find the truth with all his power; but as we have got upon his ſhoulders, and the diſcoveries of modern Phyſicians, induſtrious about the ſearch of the ſecrets of Nature, and our own experience having now better informed us, it is but juſtice and reaſon we ſhould impart it to others.

Take then ℔ ij. of Bay-ſalt, white and depurated, or as much *Sal-gemme*; diſſolve it in ℔ x. of River-water well ſetled, then add 2 dozens of Vipers, with the Hearts and Livers, their skins and entrails pulled away: boil all together in Sand, until the Vipers do eaſily get off from the Bones, ſqueeze all, clarifie and filtrate, then evaporate in a hot *Balneo*'s vapour to the dry bottom, and keep it for uſe in a well ſtopt Bottle. Of this Salt you may give to eat to healthful and ſick bodies; to the one, as a Preſervative; to the other, as Reſtorative. It is chiefly of great uſe in Chronical Diſeaſes, where the maſs of the bloud is to be purified, and the vice of digeſtion rectified. Thoſe that will have it yet more ſpecifical and ſtomachal, muſt add the diſtilled Oils of Cinament, Cloves, and Nutmeg-flower or Mace, with a little Sugar in Powder, which will be as an uniting mean to mix it perfectly with the Salt, ʒ i. of āā of theſe Oils, with ʒ i. of eſſenſified Ambergrice is required to each ℔ of Salt, for in this manner the Salt will be much more efficacious. Its *doſis* ſhall be from x. grains to ʒ ß. in Broths, faſting in the morning, to cleanſe the ſtomach from all preceding ſuperfluities, which are for the moſt part the occaſional cauſes of diſeaſes.

Another Preparation of a Theriacal Salt much more ſpecifical then the fore-going.

TAke *Scordium* and ſmall Centaury freſh pluckt, ãã. ℔ i. Roots of *Angelica*, Zeadory, *Contrayerva*, *Aſclepias* ãã. ℥ ij. ſhred the Herbs, and pound groſly the Roots, then boil them in *Balneo* in a double Glaſs, in ℔ x. of diſtilled Water of *Carduus Benedictus*, and juice of Borage and Bugloſs: being cooled, ſtrain the decoction, and put it again in the Veſſel; then add a dozen and a half of freſh prepared and cleanſed Vipers, with their Hearts and Livers, as alſo the Salts alkalized of Wormwood. *Carduus B.* ſmall Centaury, and *Scordium.* ãã ℥ viij. ſhut upon the Veſſel and lute it, and let it boil the ſpace of half a day, and all being cooled, clarifie it, filtrate and evaporate in the vapour of a Bath in a Glaſs-body with its head to a dry bottom; ſo ſhall you have a moſt rare and precious Salt, and a water endowed with many ſingular vertues; for it is a ſufficient Remedy to eradicate all manner of Agues and Feavers; it is a ſpecifick in all epidemical Contagions, and malignant Diſeaſes. The *doſis* is from ℈ i. and ʒ ß. to ʒ i. you may alſo add to this Salt the ſame diſtilled Oils and eſſencified Amber-grice, as we have declared in the precedent Preparation of Theriacal Salt, and here with this Operation ſhall we conclude this Chapter of the Chymical Preparation of Animals.

CHAP. IX.

Of Vegetables and their Chymical Preparations.

IN this Chapter we intend to make it manifeſt, that the haters and perſecutors of this noble Art, are very much to be blamed, when they diſcovered it; and that their upbraidings done to the Artiſts and Practitioners of it, are falſe and ſcandalous, ſince the Preparations which we are to deſcribe, are capable to bring the moſt envious to a ſober mind, and convince the moſt obſtiſtinate, that the Pharmacy of the ancients had never any preparation coming near its excellencly. It is upon the ſeveral parts of this noble, pleaſant, and ample Family of Vegetables, that the true Pharmaceutick ſhall ever find matter of imployment, and admiration of the Creators works. But, as the deſign of our abridgment, doth not permit us to make the examination and reſolution of all Vegetables and their parts; we ſhall content our ſelves to give one or two examples, of the manner of working either upon the whole Vegetable, or the parts thereof, which are Roots, Leaves, Flowers, Fruits, Seeds, Rinds, Woods, Grains, or Berryes, Juices, Oils, Drops, Roſins, Gums. We ſhall give a Section to each of theſe parts, the better to explain the manner of working, and to avoid confuſion.

But before we come to the matter, I have thought neceſſary to ſay ſomething of the abuſes daily committed by Apothecaries not fully enlightned with the knowledge of Chymiſtry, and which are only guided by blind men, admitting and ſuffering all the defects of their ill preparation, want of a true information of the nature of things, and a right apprehenſion of Phyſical knowledge, the true gate to Medical skill. Whence it is leſs to be admired, that blind men guided by other blind, fall themſelves, and daily cauſe ſo many other to fall with them in the pit. And as *Germany* hath *Swelferus* Phyſician to his Imperial Majeſty, who hath reformed Pharmacy, in thoſe learned and accurate Obſervations he hath made upon the *Auſpurgian* Diſpenſatory; ſo have we in *France*, *Monſieur Vallot*, firſt Phyſician to our Monarch, who hath laboured, and labours yet daily, to cultivate the field of Phyſick, and vulgar Pharmacy, and to purge it from thoſe thorns and thiſtles, which the ignorance of Chymiſtry hath cauſed to grow, and too much over-ſpread the ſame.

This truth will I illuſtrate by the example of diſtilled waters, and that of Syrups, becauſe I know, that in theſe two Preparations, vulgar Apothecaries commit the greateſt faults for the moſt part, either through ignorance, malice, or covetouſneſs, to the great diſhonour of Phyſick and Phyſicians, the diſcredit of their Profeſſion, and that which is yet worſe, the great damage of the common good.

Firſt Diſcourſe of diſtilled Waters.

If Subſtances are not throughly known, it is impoſſible to have any good ſucceſs in their Preparations, ſince from this knowledge doth abſolutely depend, the exact and moſt commendable way of Operation: and, if that be neceſſary in all Chymical operations, much more is it in thoſe which concern Vegetables, and chiefly the manner of their diſtillation without waſting any of their vertue, which hath induced me to believe it neceſſary, to give a general Idea of the nature of Plants, before I come to ſpeak of their particular preparation.

We ſhall not ſpeak here of Plants according to the ſenſe of many; following the trace and ſteps of *Botannick* Authors, which for the moſt part have left us nothing but the external Picture of the Plant, and the divers degrees of their qualities, without taking any pains to teach us the differences of the intrinſecal nature of the ſame Plants, and much leſs the true manner of Anatomizing them, to ſeparate and extract from them all what is good and ſerviceable, and alſo what is unprofitable.

To begin methodically; we muſt explain the nature of Plants, as they are in themſelves, by the diviſion we make of them, according to the degrees of their increaſe and perpetuation: for, they are either long-lived, or annual: The Long-lived (or vivacious) are thoſe whoſe roots in the two Æquinoxes do attract the univerſal nutriment to themſelves; in the Vernal Æquinox they attract what is neceſſary to bud out and vegetate, to the full perfection of the Plant, which ends by her flower and ſeed; and in the Autumnal Æquinox, they attract wherewithall to repair the exhauſting of their ſtrength, cauſed by the Suns heat, and of the other Stars and Planets. This Note is not made by us without neceſſity, being abſolutely uſeful, to acquaint the Artiſt with the moſt proper and fitting time to gather the Plant with its root, or to leave the ſame as unneceſſary; for, if he hath need of the Plant a little after it is ſprung out of the Earth, he muſt meditate with himſelf, and make a judicious reflexion, that this Plant is not yet furniſhed with that ſaline and ſpirituous nutriment, the Principle whereof is contained in the root, and that ſo his Operation will be loſt upon this Plant; ſince what he may extract of it, is deſtituted of that ſtrength and vertue which is deſired by the Phyſician, and much more of that which is requiſite to ſhew its efficacy againſt the diſeaſe; his recourſe then ſhall be to the root, which containeth the Volatile Salt, the very ſoul of the Plant, and poſſeſſing in it ſelf the vertue and efficacy of the whole. But if he deſires to work upon the ſame Plant, when it hath almoſt attained to the period of her perfection, and that it hath but yet a ſmall portion of its vertue left, which does adminiſter yet a kind of languiſhing life, until it hath recovered its vertue, ſtrength, and new life, in the time of the Autumnal Æquinox,

nox, to the end that in Winter it may evade deſtruction, and be renewed or born again in the Spring. By which it appears, that when the Plant is in her full ſtate, as they ſpeak commonly, the Artiſt muſt chooſe it between flower and ſeed, if he is deſirous to enjoy the full vertue thereof; for when it hath attained to that perfection, the ſtalk, leaf, flowers, and the firſt ſeeds, are yet full of vigour and vertue, which they communicate to the Liquor extracted by diſtillation, which being a Volatile and Mercurial Salt, and an Embryonated Sulphur, containeth all the vertue of the Plant; for, that which is extracted from it, is a ſpirituous Water, which preſerves it ſelf very long, with the proper taſte and odour of its ſubject, upon the ſurface of which ſwims an æthereal and ſubtile Oil, which is that Embryonated Sulphur, mixt with part of its own Mercury. But if the Artiſt doth expect that the Plant ſhould ſhoot and concentrate all its life in the ſeed, and that this Sulphur which was but embryonated, ſhould become actuated and fully ripe, he muſt then in ſuch a caſe reject the root, ſtalk, and leaf, becauſe they have no more in themſelves, that vertue which they had before. Here the Artiſt muſt meditate anew, and conſult with the method of Natures action; for, the ſeed being once perfected, hath no more that Mercurial and ſaline moiſture, which cauſed her vertue more eaſily to be extracted, but all is to the contrary re-united, as it were, and lockt up under the skin of the kernel and the ſeed; and moreover, theſe ſeeds are of three differing kinds; for ſome are muſcilagineous, and ſlimy, or like unto a Jelly; in the firſt of theſe, the Mercurial Salt and Sulphur are more fixt then Volatile, and ſo theſe ſeeds will not yield their vertue, but by the means of decoction; for, as they are clammy and ſticking, the vertue thereof doth not aſcend in the diſtillation: The other are milky, of a white and tender ſubſtance, whence Oil may be extracted by expreſſion, if ſo be they are well ripened and dryed; but their beſt vertue is only to be extracted, when you draw the Lacteous ſubſtance, or emulſion, out of it: For, this ſecond kind of ſeed is equally mixt with Volatile Salt and Sulphur, which eaſily communicates it ſelf to Water; the Artiſt muſt not hope, by diſtillation to extract the vertue of this kind of Seeds, no more then of the former. But there is a third kind of ſeed, altogether oleaginous and ſulphurous, which communicates to the Water neither any Mucilage, viſcoſity or clammineſs, no more then whiteneſs; but to the contrary, their ſubſtance is compacted, dry, and aſtringent by a Sulphur predominant over the Salt. The Artiſt muſt diſtil this kind of ſeeds, either alone, or with addition; alone, if externally to be uſed; with addition, if it be to adminiſter the remedy, which he pretends to extract internally to the Patient. Theſe three differences or diſtinctions of ſeeds, do ſufficiently ſhew, that it is required for a Chymical Apothecary to be very well vers'd in the knowledge of Nature, thereby to make the neceſſary obſervations upon the fixt and volatile parts of ſubſtances, whereupon he operates, that his work may orderly proceed, and not be unneceſſarily confounded.

The ſame Notes and Theorems are to be applyed to annual Plants, which are not preſerved by their root, but are every year to be renewed by their ſeed. Now of theſe two ſorts of Plants, either vivacious or annual, as well as of Seeds, there are three different kinds, *viz.* Thoſe that yield no ſmell, of which ſome are almoſt inſipid or taſtleſs, or acid, or bitter, or ſeverally intermixed of theſe two laſt qualities, and others which have a taſte by themſelves ſharp and ſubtle; all theſe kind of Plants are green and tender, whoſe vertue begins to appear in the prime of their vegetation, becauſe they do abound in Juice, which contains in it ſelf an eſſential tartarous Salt, which with time and heat thickens into a Mucilage, from whence, but with great difficulty, they cannot be ſeparated; therefore muſt they be taken whileſt they are yet juicy and tender, ſo as to break eaſily upon the leaſt bending of their ſtalk. The ſecond kind of Plants is altogether oppoſite to the firſt; for, the Plant newly growing out of the ground is endued yet with little of vertue, even a good while after; for when they are yet green and tender, they are taſtleſs and inodorous, have no taſte properly but of graſs, becauſe the ſuperfluous humour is yet predominant, and that their vertue doth not conſiſt in an eſſential tartarous Salt; but this kind of Plant carrys with its natural nutriment, a ſpirituous and volatile Salt, mixt with and Embryonated Sulphur very ſubtle, which never is reduced from power into act, nor ever diſcovered by the taſte or ſmell; but after this ſuperfluous humidity is by heat concocted and digeſted; then begins to appear the vertue of theſe Plants, diſcovered by the ſmell and taſte, but particularly by the ſmell. The proper time to work upon this ſecond ſort of Vegetables, is when their ſtalk begins to grow dry at the foot, when they are yet covered with flowers, and begin already to ſhew ſome little part of their ſeed. The third kind of Vetables is mixt and compoſed of the two firſt, for they have a taſte from the firſt moment of their vegetation: But they are without ſmell, and acquire very little when they are in their perfection; or, if they have any, it

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appears only when they are preſſed, grounded or rub'd with, becauſe their Sulphur is overcome by a ſlow and groſs viſcoſity, which contains much Salt, and appears by a bitter and biting taſte, or a ſweetiſh ſugared ſavour like unto Honey, the vertue of this laſt kind, without previous digeſtion or fermentation cannot be well extracted. Theſe Plants are to be gathered, when their flower is yet upon them, if ſo be they are bitter and without ſmell, but if they bear fruit, berries or grains, their maturity is to be expected, becauſe it is in theſe parts that the principal vertue of the whole is maintained, and it is in the center of the ſugared Muſcilage, and of a Honey-nature, which is in theſe fruits, that an Artiſt muſt ſeek the vertue of theſe wonderful Mixts.

Now it is not enough for us to have given theſe general notions, unleſs we make ſome particular applications, which may ſerve us for a pattern and guide upon each of theſe kinds; of integral Plants or their parts. We ſhall then in the firſt place treat of Juicy, Nitrous Plants, that is to ſay, thoſe which participate of a Salt, much of the nature of Salt-peter, or of that Salt in the Earth, which is the Principle of Vegetation, and ſeems to have received yet very little of alteration in the body of theſe Plants, only that it begins already to partake of a little of Tartar and its feculency. Plants of this nature are, Parietary, Fumitory, Purſlane, Borage, Bugloſs, Mercury, Nightſhade, and generally all ſucculent Plants, which are neither acid nor bitter to the taſte; but whoſe ſavour is only mixt with a tartneſs compounded of acidity and bitterneſs; qualities near to the taſte of Salt-peter.

Of the preparation of Nitrous, Juicy Plants, how to extract the Juice thereof, the Liquor, Water, Extract, Eſſential Nitro-tartareous Salt, and the Fixed Salt.

TAke a good quantity of any of the Plants above mentioned, which you muſt by parcels beat in a ſtone, wooden or Marble Mortar, until they be reduced to a kind of Pap, that is to ſay, until the parts of the Plants be ſufficiently diſunited and confounded together, ſo that expreſſing the ſame in a Hair-bag, Tammy, or Linnen Cloth thinly woven, you may extract all the Juice, which being thus extracted, you may run again through a cloſer ſtrainer, and then let it ſettle, until in a manner it be depurated by it ſelf; after which you muſt ſoftly pour by inclination, this Juice ſo depurated in Cucurbites, or Bodies of glaſs, fitted for Limbecks, and place in *B. M.* in caſe you deſire a good Extract and but a weak Water, becauſe the heat of the ſaid *B. M.* is not ſtrong enough to elevate the eſſential Nitrous Salt of the Plant, which cauſes it to remain with the thick Juice, properly called Extract, when reduced to a thicker conſiſtency, in the bottom of the Glaſs. But if you deſire a long laſting Water, and animated with its ſpiritualized Salt, you muſt then place your Cucurbits in Sand, becauſe this degree of heat is capable to elevate and volatilize the pureſt and moſt ſubtile portion of the Salt, and raiſe it towards the latter end of the diſtillation, with the laſt aqueous vapours: nevertheleſs, great heed muſt be taken, that the heat towards the end be not too violent, and that the reſidence in the bottom of the Cucurbit become not totally dry, or cleave to the Glaſs in danger of burning. But before you come to the end of your Operation, have a ſpecial care that your Juice may be exactly defecated, for there are two Separations performed, when by the heat of *B. M.* or ſand the ſeparation of the radical ſubſtance of the Juice of the Plant is made, from the feces or ſediment which falls in the bottom of the Glaſs, and the skim which riſes above; wherefore this Juice ſo depurated muſt run through a ſtrainer of Cloth, commonly call'd a Bag, or *Manica Hippocratis* in the Shops: after which, the Juice being ſo ſeparated of all its Heterogeneities, and of the forain mixture of terreſtreity, the diſtillation in *B. M.* or Sand muſt be continued, according to the intention of the Artiſt, until this Juice be reduced to a conſiſtency of Syrup, which is to be put in a freſh Cellar, or ſome other cool place, until the Nitro-tartareous Eſſential Salt be reduced to Cryſtal, and ſeparated from the viſcoſity of the inſpiſſated Juice, which muſt be drawn again by a ſoft effuſion by inclination, then put a ſecond time in *B. M.* or Sand, to evaporate it to the conſiſtency of an Extract, which ſhall yet contain great ſtore of Salt, in caſe the firſt Operation was in *B. M.* and will be uſeful to the making of Opiats, according to the indication which the learned and skilful Phyſician or the Artiſt himſelf will take, when they intend to make uſe of it in any diſeaſe, according to the nature or vertue of the Plant whereupon the work is performed. And thus much for neceſſary Obſervations, concerning the purification of the Liquor of Juicy Plants, diſtillation of their Water, and the manner of making their eſſential Salt and Extract.

We come now to the preparation of the fixed Salt; to this end you muſt dry the Cake, or remaining part of the Plant after the expreſſion of the Juice, then calcine and burn it well, until all be reduced to whitiſh gray aſhes, whereof you muſt with River or Rain-water make a Lye, which muſt be filtrated through gray Paper not much ſtiffened, that the ſtiffening or glue may not hinder your Liquor to run ſwiftly and eaſily through. After the firſt Lie, impregnated with the Salt of the Aſhes of the Plant, hath been filtrated, you muſt pour new water upon the Aſhes, to extract the remainder of the Salt, until the water comes off as inſipid and void of taſte as it was powred firſt; which is a manifeſt and evident ſign, that no portion of Salt remains in the Aſhes, which ſeem to be no more then an uſeleſs Earth, or as ſome do call it, the *Caput Mortuum* of the Plant upon which you have wrought: but I will prove the contrary nevertheleſs, by the following relation of what happened to me at *Sedan*, after I had wrought upon a parcel of Fennel: For, being poſſeſſed of an opinion, as others are, that theſe Aſhes deveſted of their Salt were totally unuſeful, I cauſed them to be thrown away in a back-yard, where for the moſt part, Dung and other Immundicities were caſt; but the next year by what happened unto me, I knew I was deceived; for great ſtore of Fennel grew in that yard, whereof, after it had attained to its perfection, I drew great ſtore of diſtilled Oil; by which experiment I was taught with that excellent Philoſopher and Phyſician *Van Helmont*, that the Median Life of things is not ſo eaſily deſtroyed as it is imagined, and that according to this Axiom of Philoſophy, *Formæ rerum non pereunt*; becauſe both the Art and Artiſt do but follow from far our Mother Nature; and this is ſufficient to convince us, that we apprehend not the leaſt of her ways or contrivances, much leſs any of thoſe which ſhe uſes towards the attaining her own ends. But let us return to our purpoſe after this digreſſion; which, becauſe it is in its proper place, I thought more fitting to make here: After then you have gathered together all the Lyes well filtrated, you muſt evaporate them in Jugg-mettle diſhes upon ſand, until they thicken to a skin, or incruſtate by reaſon of the Salt, which then abounds; then muſt you begin with a *Spatula* to ſtir and agitate ſoftly the Liquor, until the Salt be wholly dryed, which then being put in a Crucible, reverberate in a Wind-furnace between kindled hot burning Coals, until it grows glowing red on all ſides, taking nevertheleſs exact heed that it melt not; this done, take off the Crucible from the fire, let it cool, and then diſſolve the Salt in the Extracted Water of the Plant which hath yielded the ſaid Salt, that you may once more filtrate it, purifie it, and reſtore that portion of Volathe Salt which aſcended in the diſtillation; after which, you muſt put this diſſolution in a Glaſs Cucurbit covered with its head or Limbeck, and draw off again the Water from that Salt upon Sand, until it begins to contract a skin, then ceaſe the fire, and put the Veſſel in ſome cool place, to cauſe the Salt to cryſtallize, and thus continue drawing off the Water upon Sand, and cauſing the Salt to ſhoot in Cryſtals, until it be all drawn away, and ſo ſhall you have a pure and cleanly Salt, fit for uſe when you have occaſion: but the chief uſe of it, is to put part thereof in the Water extracted from the Plant, to render it thereby not only more active and efficacious, but alſo to make it more durable, fitting for keeping ſeveral years, without any loſs of its vertue. The proportion may be of ʒ ii. upon every pint of diſtilled Water. The general uſe and faculty of the fixed Salts of Plants made by calcination, evaporation, reverberation, depuration and cryſtallization, is moderately to looſe the Belly, draw away Urines, and take off all obſtructions from the lower parts of the body: the other particular vertues may be taken or aſſigned, according to the nature of the Plant from whence they were extracted.

And as we have declared the manner of purifying fixt Salts, ſo muſt we do alſo in ſhewing the way, of drawing off and ſeparating a certain viſcous and coloured ſlimineſs, which is found even amongſt the Eſſential Nitro-tartareous Salts, in their firſt Cryſtallization. It is thus performed; You muſt diſſolve them in clean, common Water, and percolate three or four times upon a portion of the Aſhes of the Plant whence they were extracted; which is done upon two intentional ends: For, the Artiſt muſt not work blindly, or without being capable to give an account, wherefore he doth, or doth not ſuch a thing: The firſt intention is, that the Eſſential Salt which is not yet purified, and for the moſt part is found mingled with the Extract, without having been capable to take the Idea or character of Salt, by reaſon of the hinderance cauſed by the clammineſs of Inſpiſſated Juices, takes in his way as it paſſes through the Aſhes the fixed Salt of its own Body; which imprints upon it its own ſaline Idea, and ſo cauſes it eaſily to cryſtallize, after the ſuperfluous Liquor is vapoured away: The ſecond intention is, that the Aſhes may preſerve the thick and clammy body of the Extract in themſelves, and ſo the Water, impregnated with the eſſential and fixt Salt of the Aſhes, may paſs cleanlier and purer by the re-iterated Percolation. This being ended, you muſt ſlowly and gently vapour away your Water in a Diſh of Jugg-mettle in Sand; not till the skin begins to cover it, as we have ſpoken when we treated of the Fixed Salts, but evaporating away the two thirds, or the three parts of the Liquor, which muſt be ſoftly and without ſhaking the bottom gently powred in a clean Earthen Diſh, ſo as if by the action of heat any ſmall Atoms or Corpuſcles ſhould happen to ſettle and make a ſediment in the bottom, they ſhould not mix with the clear Liquor to hinder the purity of Cryſtallization in the Salt. The water which ſhall ſwim above the Cryſtals, muſt be drawn off, and the Evaporation re-iterated, until half of the Liquor be conſumed away: and ſo continue till you have got all your Salt turn'd to Cryſtals. And if ſo be this way of Purification doth not ſatisfie the Artiſt, and that the Cryſtals want the cleanlineſs and tranſparency deſired; he ſhall put them in a Crucible made of the leaſt porous Earth which is to be found, and let him melt his Salt in a Wind-furnace, that the fire of Fuſion may conſume all what may hinder the Cryſtallization to be done with the requiſite cleanlineſs and tranſparency: this Salt being ſo melted, muſt be poured in a very clean braſs Mortar, warmed a little before, that the too violent heat of the melted Salt ſhould not cleave or ſplit it; when it is cooled, diſſolve it in a ſufficient quantity of the Water diſtilled from the Hearb whereof the Salt is extracted; but the quantity of Water muſt not exceed that of the Salt; otherwiſe the third part or half muſt be drawn up by Diſtillation, again Evaporation; which being done, the Veſſel muſt be placed in a cold Room, and the Cryſtals will become fair and tranſparent, with ſharp ends and ſides much like unto the figure of Salt-peter, and about the ſame taſte: Thus you muſt continue to evaporate and cryſtallize, until the Water yields no more Salt. This Eſſential Salt muſt be dryed between two Papers, then be put in a well ſtopt Glaſs-bottle to preſerve for uſe: It hath the vertue to preſerve as well the Water of the diſtilled Plant as the fixed Salt; and moreover makes, it diuretical, aperitive, and cooling, much better then the Mineral common Cryſtal made with Salt-peter. It may be given in Broths, or the ordinary drink of the Patient, according to the judgement and diſcretion of the Prudent and Learned Phyſician. The *doſis* is from ten grains to a Scruple.

The

The Preparation of Juicy Plants, poſſeſſed with an Eſſential Volatile Salt, and how to extract the Water thereof, their Spirit, Juice, Liquor, Eſſential Volatile Salt, Extract and Fixed.

AFter we have ſhewn the way of operating upon thoſe Plants which are impregnated with a Nitro-tartareous Salt, and in what manner the Artiſt is to prepare them, we muſt proceed in ſhewing what change of Operation there is in thoſe which are alſo juicy, but with an acrimonious, biting, and Aromatical taſte, poſſeſſing in themſelves great ſtore of Eſſential Volatile Salt: ſuch as are all kind of Creſſes, Water-Parſley, Water-Mint, Aliſander, *Rapiſtrum* Spoonwort, and, to be ſhort, all the kinds of Muſtard, and generally all other Plants of this nature, which commonly are called *Antiſcorbuticks*.

But as we have ſufficiently and amply enlarged our ſelves upon the preparation of Juicy Plants, which have in themſelves a Nitro-tartarous Juice, and the Operations already deſcribed are to lead the way, and ſerve as for a rule and example in the caſe of all other Juicy Plants; we have nevertheleſs thought it neceſſary to add here ſome notes, concerning the nature of theſe Plants, the proper time of gathering them to enjoy their vertues, and furthermore to add the manner of extracting the Spirits of theſe Plants, by the help of Fermentation, becauſe we have ſaid nothing of it heretofore.

It is then to be noted firſt of all, that theſe either wateriſh or cultivated Plants, do from their firſt original participate of great ſtore of Eſſential Salt, which is of a very ſubtile, penetrating and volatile nature: and that therefore the Artiſt muſt work upon theſe with more care, fore-ſight and diligence, than upon the foregoing. The reaſon is, becauſe the other had not in themſelves that ſaline, ſubtile and Volatile Salt, which eaſily vapours and flies away, if the Artiſt doth not uſe great induſtry, and take the nick of time to preſerve it; for if too much time be ſpent, from the gathering of theſe Plants to the making uſe of them, their Spirit doth eaſily contract a heat, and being volatilized by the ſame, doth fly away, and the body of the Plant remains rotten and uſeleſs. This kind of Vegetable then is to be taken when he is newly ſprouted, and begins to frame the tuffs or *umbella's* of its flowers; for, it is in this very time that the Eſſential Salt of the Plant is ſufficiently exalted, and hath acquired all the vertue which is hoped for; for, with a longer ſtay, all this efficacy would concentrate it ſelf in a ſhort time in the Seed, by reaſon of the Plants own heat, and that of the time of the year, as it is ſpecially obſerved in the bringing up of Water-creſſes or Noſe-ſmart. And ſo much ſhall ſuffice to admoniſh the Artiſt, what heed he is to take in his Operation upon Plants of this nature; for the remainder, let him follow the Preſcriptions we have already given above: and ſpecially not to uſe the Crucible for the Eſſential Volatile Salt of theſe Plants, otherwiſe all this Salt would vaniſh away, by reaſon of its moſt ſubtile and moſt volatile Principle, which participates more of Light and Heaven, then of Water or Earth, which in Nitro-tartarous Salts abounds moſt.

How the Spirit of Juicy *Plants, poſſeſſed with an Eſſential Volatile Salt, is to be Extracted.*

After we have given all the neceſſary obſervations to work upon Plants of this nature, we muſt end our diſcourſe or treaty thereof, by the manner of well extracting their Volatile Spirit by the help of Fermentation; which is thus performed.

℞ As much as you ſhall think fitting of one of theſe Plants, and cleanſe it from all its earthlineſs and impurities, bruiſe it in a Marble, Stone, or Wooden Mortar, and immediately put it in a great Glaſs Receiver, commonly called a great *Ballon* by the *French* Artiſts, and pour water upon it, between luke-warm and boiling, which by the Cooks is called Scalding-water, the height of ½ foot, then ſtop the neck of your Receiver with a blind-head (or *Vaiſſe au de Rencontre*;) and thus let it reſt about two hours: after which, new water leſs then luke-warm, and only ſimpering muſt be added, to temperate the heat of the firſt, until the finger being put in can ſcarce perceive the heat, and that is the degree which the moſt expert in the Practice and Theory of Chymiſtry, uſe to call Natural or Human Heat, and the true point or inſtant of Fermentation. Herein the Chymical Artiſt needs properly his niceſt judgment, to take the true nick of time of this ſoft and amicable heat, becauſe if this degree of heat doth exceed, it volatilizes too ſuddenly, the Spirit and ſubtile parts of the Plants upon which he doth work; which, notwithſtanding all care and precaution, eaſily vapours and vaniſhes away, for all is converted afterwards into an unpleaſant acidity, which contains no more of the Volatile Spirit: And if this heat, on the other ſide, is leſs than it ought to be, it doth not ſufficiently help the Leaven or Ferment to diſſolve and divide the moſt ſolid parts of the Plant, which contain yet in themſelves a Centrical Salt, contributing very much to the perfection of the Spirit which is to be extracted out of the Plant; and moreover helps not little to diſunite the viſcoſity of the Juice of the Plant, which contains in it ſelf the principal portion of Eſſential Volatile Salt, which affords the Spirit; nevertheleſs, it is ſafer to fail in the defect then in the exceſs. Things being put in this temper, Take Barm, or Beer-yeſt, if you are in a convenient place to recover it; if not, raiſe Flower diſſolved in Water ſomething leſs then lukewarm, with about ℔ ß. of Leaven or Ferment commonly uſed every where for Dow in the making of Bread: and when the Liquor is ſufficiently raiſed and puft, and the flower hath got on the top of the Liquor, heed muſt be had when the top of the Flower begins to crack, for it is a token that the Fermenting Spirit is ſufficiently excited, to be reduced from power into act, and to be introduced in the matter, ready to be fermented: but you muſt note, that your Veſſel is not to be more then half filled, otherwiſe all will run out and fly away, by reaſon of the action of the Ferment, which by an internal motion agitates and elevates the matters, and in which motion doth conſiſt the power both of Nature and Art. This firſt Heat of Ebullition being paſt, the Artiſt muſt ſuffer the Ferment to act ſoftly and by degrees, until he perceives that all that Cruſt which the Fermenting Spirit had raiſed up, and framed out of the moſt corporeal and material ſubſtance, to be as a Wall or Defence againſt the evaſion or evaporation of the acting Spirits, begins of it ſelf to ſubſide, and precipitate it ſelf, becauſe it is no longer ſupported by the activity of the Spirits; this moſt commonly doth happen at the end of two or three days in Summer, and four or five in Winter. Here again muſt the Artiſt be very careful to take his time, for as ſoon as this ſign begins to appear, he muſt diſtil his fermented matter, unleſs by his own ſloth and neglect, he will loſe what Art and Nature had prepared to his hand; for, at that time this Fermented Spirit eaſily vaniſhes, and what remains is no more then an acid, uſeleſs and unprofitable Liquor. But when the Artiſt taking opportunely his time, ſhall have put his fermented matter in the braſs Veſſel or Body, covered with its Moor's-head, or Still, exactly luted the Joynts, as much of the Head as the Pipe, taken care that the Water of the Refrigeratory, to condenſe the raiſing Vapours, be kept cool and freſh, given the fire by competent degrees, until the drops begin to fall and follow one the other pretty thick, and having attained this degree, cloſed the Regiſters of the Furnace,

and

and ſtopt exactly the door of the Furnace, to keep the Fire in that temper; he ſhall obtain by theſe means a Volatile Spirit, very ſubtile and efficacious; and muſt not ceaſe the fire, until he hath found out by the taſte, that the Liquor ſtilling down be inſipid, which is the true ſign upon which he muſt ceaſe his Operation. If he will rectifie this Spirit, he muſt diſtil it again in *B. M.* But in caſe he hath proceeded by the method we have deſcribed, there ſhall be no need of rectification, becauſe he can ſeperate immediately in the Operation, the firſt Spirit from the ſecond, and the ſecond from the third, which ſhall differ accordingly in degrees of vertue and ſubtility, becauſe they have more or leſs of mixture of phlegm.

The vertues of this Spirit are wonderful in all Diſeaſes which have their ſeat, and are rooted in fixt, crude, and tartarous matters, which he diſſolves and volatilizes powerfully: But above all, the Spirit of Spoonwort, as alſo its Volatile Salt extracted of its Juice, as alſo the Juice of all Nitro-tartareous Plants; for, theſe are the two moſt powerful remedies which learned men have found againſt ſcorbutical Diſeaſes raigning in Maritime Countryes, and whereof very few can preſerve themſelves in long Sea-voyages. And though theſe diſeaſes be almoſt unknown in the Climes of *France*, yet for the moſt part ſuch are evil Rheumatiſms proceeding from the alteration of the maſs of the bloud, whoſe whole Subſtance is vitiated, and degenerated in a groſs and malignant ſeroſity, whoſe venomous quality imprinted in the membranous and nervous parts, cauſes wearineſs, running pains, ſwellings, and ſpots in the skin, which are all ſymptoms and tokens of the Scurvy; and therefore, as theſe diſeaſes can only be terminated by Diaphoreticks and Diureticks, recourſe muſt be had to the Spirits and volatile Salts of Anti-ſcorbutical Plants, whereof we have ſpoken but a little before. The Doſis of the Spirit is from vi. drops to xx. in broth, or ordinary drink of the Patient; that of the volatile Salt, is alſo from v. to xv. or grains in the ſame Liquors, or is yet better, in the water of the ſame Plant.

A particular way how to make the Royal Water againſt the Scurvy.

THis Water hath produced ſo many great Effects for the Reſtoration of ſeveral Perſons of all Ages, and of both Sexes, that I thought neceſſary to communicate it to the Readers that may be obnoxious to ſcorbutick pains, without knowing the Origin of them, neither the preparation of ſuch Remedies as may prevail to cure and root them out.

Take then half a pound of Horſe-radiſh, which in Latin we call *Raphanus Ruſticanus*, make it very clean, and after cut it in very ſmall ſlices, put then into a great Glaſs-body, and add to them three pound of Sea and Garden Scurvy-graſs, a pound and a half of Garden and Water-creſs, and a pound of that kind of Scabioſe that is called Devils bit; the herbs muſt needs be cut very ſmall, pour upon 12 pounds of new Milk, and four pounds of good Rheniſh-wine, or any other good clear White wine, ſtill them all in *Balneum* until nothing cometh forth. Keep this water in Glaſſes with narrow necks well ſtopt, to the end that the Volatil Spirit that renders it Efficacious might not fly away, therefore you muſt have a care to cover them with a piece of wetted Bladder. This Royal Water is admirable to rectifie the maſs of bloud, and to temperate the heats of the Entrails, and that of the Hypocondres, it drives out by Urines, and by the tranſpiration both ſenſible and unſenſible: it re-ſtabliſheth the functions of the Ventricle, and give a good ſtomach, which ſheweth that it is ſpecifick againſt the Scurvy and the Obſtructions. It is to be taken to the quantity of two ounces to ſix, in the morning faſting, and as much in the afternoon about four or five a clock. You may eat and drink two hours after you have drunk it: but as we have joyned to the uſe of this water, that of the Lozanges, and of the ſpecifick Pills againſt the Scurvy, it is alſo neceſſary that we ſhould give the deſcription of them.

The Lozanges againſt the Scurvy.

Take half an ounce of *Antimonium Diaphoreticum*, ſix drams of the thin Rind of new Limons, and a dram and a half of Mace, two ounces of Almonds blanch'd, and an ounce of *Piſtaceswell*, cut theſe four things in very ſmall crums, and dry the Diaphoretick very well: then boil a pound of fine Sugar in conſiſtence of Sugar of Roſes, with ſomewhat of Roſe and Cinamon Water, after that ſtir your Sugar with the ſpatle for a little while, and add to it the other things, mingle all equally, and when you are ready to pour your Lozanges, drop into the Skillet half a dram of Tincture of Amber-grice, cut your Lozanges to the proportion of two or three drams, the uſe of them is to eat one in the Morning, and another in the Evening, after you have drunk the water above mentioned.

The Pills againſt the Scurvy.

TAke two drams of the beſt Rhubarb, three drams of Aloes-Socotrin very fine, two drams and a half of pure and new Myrrh, two drams of Gum Ammoniac in clear drops, a dram of pure and fragrant Saffron, four ſcruples of the Salt of Tartar according to *Sennertus*; Powder every thing by it ſelf, and then mix them and make them up into a maſs, adding to it drop by drop, ſo much as is ſufficient of the *Elixir Proprietatis* made with the ſpirit of Harts-horn, and of the Liquor of the Bloud-ſtone, the preparation of which is in the Treatiſe of the Stones. The Doſe of theſe Pills, is from one half ſcruple to a dram, you muſt make forty Pills out of a dram, to the end that they might diſſolve eaſier; they are to be taken before the meal of the Evening, or when you go to bed, they do not diſturb the digeſtion, and cauſe no Gripings at all: but they purge gently, you may uſe them every other day, or every third day.

The manner how to make the Spirit, and the Extract of Scurvy-graſs.

AS there is ſome delicate Perſons that cannot take of the Water againſt the Scurvy in a reaſonable quantity, I thought fit to give the proceſs how to make well the ſpirit, and the extract of Scurvy-graſs: which are two excellent good Remedies againſt the Scurvy, and very eaſie to take, becauſe the one may be given in White-wine, and the other in a Bollare, are to be wrapt up in Wafers: you ſhal make them as it followeth. Take four pounds of Horſe-radiſh, cut in very ſmall ſlices, ſix pound of Garden Scurvy-graſs ſeeds, eight pounds of Sea Spoonwort, and ten pounds of that of Garden. You muſt bruiſe the ſeeds in a Marble Mortar, and hack the herbs very ſmall, and put them all in a hot ſtill of Copper tin'd with inſide, then pour upon ſo much of good Rheniſh Wine, or any other good white Wine, until the things ſwim eaſily in it, cover the ſtill with its head, lute the joynts very exactly, fit a convenient Receiver, and give the fire as if you would ſtill ſome ſpirit of Wine, take heed that the water of the Refrigeratory be always freſh and cold, and change it if it becomes hot. Sever now and then what doth ſtill, and taſte it: and when the ſpirit ſhall begin to be no more ſtrong nor good to the Noſe, and to the Tongue; then do not mix it more, but continue the fire until the drops be quite taſtleſs, inſipid; which being, you muſt ceaſe the fire, and keep that ſpirituous water by it ſelf, that will ſerve as it is, and will be given in a greater quantity then the ſpirit; if not, it will ſerve for another diſtillation. The firſt ſpirit being very ſtrong, is to be taken in white Wine, from x drops to 30 and 40. it doth purifie the maſs of the bloud by ſweats, unſenſible tranſpirations, and by Urines: but as this ſpirit doth penetrate into the laſt digeſtions, and that it ſearcheth by its ſharpneſs into the ſmalleſt hair of Veins, Arteries, and Lymphatick Veſſels, to draw out and correct thoſe ſharp and mordicant humors that cauſe the pains and ſcorbutick eruptions: it is alſo neceſſary to cleanſe the low Ventricle, and chiefly the Spleen and the Pancreas of the terreſtrious and thick matters by the Stools, which may be eaſily done with the following extract.

The Extract of Scurvy-graſs.

AFter that you have ended the diſtillation of the ſpirit, and of the ſpirituous water, you muſt open the hot ſtill, and take out what will remain in it, then you are to paſs through a ſieve the Liquor, and you ſhall ſqueeze as much the matter as you can, dry the expreſſion that you muſt burn, and draw out the Salt according to the Rules of Art; Furthermore clarifie all the Liquor with ſome whites of Eggs, and evaporate it in the Sand ſlowly to the conſiſtency of a very thick ſyrup: and when you ſhall have in mind to purge thoſe that are troubled with the Scurvy, take from one half dram to three and half, an ounce of that extract to which you are to joyn the Salt you have drawn out of the calcin'd matters, and add to it powder of good Rhubarb, and of that of Senne, from ten grains to a dram, that you muſt mix well, and give it in the form of a *Bolus* to ſwallow in Wafers, drinking a little draught upon of good white Wine, and two hours after a Broth, or a good draught of Poſſet-drink: that purgeth very gently, and brings away the viſcuous matters from the ſides of the Ventricle, taketh away the Obſtructions of the Spleen, thoſe of the Meſentery and Pancreas, by the mean of that eſſential Salt which lyeth in that extract, as its taſte doth manifeſt it very ſenſibly.

There will be no need of making any great diſcourſe by it ſelf, whereby to give to underſtand how the little Centaury, Wormwood, Rhue, Penny-royal, Balm, Mint, Flowers of Lime-tree, and other Plants of this nature; which in themſelves have no moiſture when they are poſſeſſed with their vertue, and fit to be uſed, are to be gathered. They are only to be groſly bruiſed in a Motar after they are cut, and you have added to each ℔ of the Plant (which you purpoſe to ferment and diſtil thereby, to extract the Spirit) x ℔ of water, as we have already related above, obſerving all the notes and hints alſo given, which are eſſentially neceſſary to the true ordering of fermentation. But in caſe you purpoſe only in your diſtillation to extract hereby the ætherial Oil, and ſpirituous Water of the Plant, you muſt only diſtil the ſame Plant without any previous infuſion, maceration, and much leſs fermentation, being ſhred very ſmall, putting to each ℔ of plant x ℔ of Water.

There is yet notwithſtanding a way to preſerve Plants of this nature, and even the Flowers themſelves, and cauſe them to ferment without any other addition of mixture: And herein alſo is the Artiſt to take great heed, and to be very circumſpect: for, unleſs you will loſe time and labour, not one of the circumſtances which we ſhall now relate, is to be omitted. Proceed then as it followeth; Gather the Plant or Flower when they are in their perfection; to this purpoſe muſt the Plant be in a ſtate between Flower and Seed; and if it bears no Seed, or be only a Flower, it muſt be in the height of its ſmell, and the leaves muſt firmly hold to their ſtalks: But the principal Note beſides, is, the time of gathering, which is, to gather theſe things a little after the riſing of the Sun, that the dew may not be upon them, which would cauſe corruption; they muſt not alſo be gathered after a rainy-day, or the day before, whereby they might have contracted ſuperfluous moiſture, which would cauſe the ſame accident. Having theſe Plants thus conditionated, you muſt fill great Pots or Veſſels of Jugg-metal therewith, well cleanſed and dryed, and thruſt them in very hard; leaving no empty ſpace, but only ſo much as will ſerve to put a ſtopple of Cork very well fitted to the place, and ſteept in melted Wax; this done, pour upon the ſtopple, black melted Pitch, and beſmear all round about the mouth of the Veſſel, then put it in a Cellar upon Borads, that the Earth may not impart it to much coolneſs, and the Plant or Flower may not thereby be altered; and ſo ſhall you for whole years preſerve Plants and Flowers, which ſhall be fermented by themſelves, and will be ready for diſtillation at all times that there will be any need of it; adding only ℔ x. of Water to every ℔ of Flowers or Plants ſo fermented by themſelves, and you ſhall extract a Water and a Spirit which ſhall really be endowed and impregnated with the odour, and all the vertues of the Plant, as we have our ſelves exemplified upon Plants ſo digeſted and fermented in themſelves and by themſelves, by order of Mr. *Vallot*, firſt Phyſician to the King of *France*; who hath ever ordained thoſe ocular demonſtrations to be made in the eyes of the publick; that the vertue of things, and the nobleſt way of diſtilling them may be made known, and that it may be truly confeſſed from henceforth, that this noble and learned way of operation owes its invention to him.

We have nothing elſe at preſent, to ſay, touching the general rules and common obſervations which the Artiſt is to make upon the Vegetable in general, and its parts in particular, but that we muſt impart the way of extracting the Liquors from the whole Plants, or their parts, and exalt them more and more, until they are arrived to the nature of their firſt being, which will eminently poſſeſs all the central vertues of their Mixt, becauſe Art and Nature have preſerved in this operation all the ſeminal powers with which it was endowed, as our great and illuſtrious *Paracelſus* doth moſt learnedly explain in a Treatiſe, which he intitles, *De Renovatione & Reſtauratione.*

The manner of Extracting Liquors from the Plants and their Quinteſſences.

ALL Plants are not fit for this operation, becauſe they have not equally a ſufficient proportion of Salt, Sulphur, and Mercury in themſelves, to communicate to their Liquors and Quinteſſences, the vertue of renewing and repairing themſelves: and *Paracelſus* himſelf doth only recommend us two, among all the reſt, which may ſerve for a rule and pattern, in all other Plants coming near the nature of theſe two, *viz.* Balm gentle, (or *Meliſſa*) and the great Celandine; among thoſe that come near, we may lawfully comprehend the great *Scrophularia*, the little Centauray, and the vulnerary Plants, as is the *Pyrroba, Conſolida, Sarracenica, Virga aurea*, St. Johns wort, Wormwood, and generally all Alexiterical Plants, as *Scordium*, *Aſclepias*, Gentian, and the kinds of Gentianel, Rhue, Parſley, Smallage, and many more, which we leave to the choice and judgment of the Artiſt, who ſhall prepare them all in the manner we will relate hereafter, and when he ſhall have extracted the Liquor or Quinteſſence, he may uſe it as occaſion ſhall ſerve, and according to the vertue of the Plant.

Of theſe Plants when you intend to prepare any, being in its ſtate and ſtrength, that is, when the Flower is fully blown, but not yet grown to Seed, at that time which *Paracelſus* calls *Balſamiticum tempus*, the Balſamick time, *i. e.* a little before the riſing of the Sun, becauſe in this operation is needful, that ſweet and pleaſant humor which Plants do in the night time attract from the dew, by the magnetical and natural vertue wherewith they are endowed to recruit themſelves with the neceſſary moiſture as much for their ſubſiſtance and ſelf-preſervation, as to reſiſt the Suns heat, which by day time ſucks and dryeth them: when you have a ſufficient quantity of the Plant you intend to prepare, beat it in a Marble Mortar, and reduce it to an impalpable Pap, as near as you can; then put this Pap in a long-neckt-matraſs hermetically ſealed to digeſt in Horſe-dung, the ſpace of a Philoſophical month, which is forty natural days; or elſe put the Veſſel in a vaporous Bath, wrapt up in ſawings of Wood, or minced ſtraw during the ſame time, and in a heat analogous to that of Horſe-dung. The time being expired, open your Veſſel to take out the matter which you ſhall find reduced into a Liquor, which being wrung, ſeparate the pure part from the impurity in *B. M.* in a ſlow heat, that there may be a reſidence of the groſſer parts, which you ſhall ſeparate by inclination, or, which is better, by filtrating this Liquor through Cotton by the Glaſs Funnel: This Liquor ſo depurated, put in a Viol Glaſs, to joyn therewith the fixed Salt, which you ſhall draw off by expreſſion from the Plant, or from the ſame dryed: which will ſerve to encreaſe the vertue thereof, and make it more laſting, and even as it were incorruptible.

But when the Artiſt will go further, and purifie this Liquor to the higheſt degree, and reduce it to a Quinteſſence, he muſt proceed thus.

℞ equal parts of this Liquor, and Water or Liquor made out of diſſolved Salt, (the manner of which Preparation we ſhall teach in the Chapter of Salts) and put them in a Matraſs, which being hermetically ſealed and expoſed to the Sun during ſix weeks; thus without any other operation, this ſaline Liquor will ſeparate all heterogeneous and ſlimy ſubſtances, which did hinder the purity and exaltation of this noble Medicament: but, this time being over, you ſhall ſee three ſeveral ſeparations, which are the feces of the Liquor of the Plants, the Quinteſſence of the Plant, which is green and tranſparent as Emerald, or red and clear as an oriental Granate, according to the quality and quantity of Salt, Sulphur, and Mercury, which ſhall predominate in the prepared Plant.

I know many will ſay, that the practiſe of this operation is eaſie, and moſt will hardly believe, that the Liquor of Plants or their Quinteſſences ſhould poſſeſs thoſe vertues, which after *Paracelſus*, we will attribute unto them. I wiſh nevertheleſs every one might be, by legitimate and true experiments, as well aſſured of this truth as I am my ſelf; that Artiſts might be more induſtrious, in furthering theſe rare Preparations, with a confidence, they ſhall not miſs the benefit they may hope from it in their particular, and procure to the general ſociety of mankind, in preſerving and repairing health in the individual members thereof.

Of the Uſe and Vertue of the Liquor of Plants.

THis word Liquor is not here ſingly to be accepted for juice, or moiſture of the Plant: but it is by excellency here given to this kind of Remedy, becauſe it contains in it ſelf, all the efficacy and vertue which may be in the Plant whence it proceeds; whence it is not difficult, to make the underſtanding conceive, to what uſe theſe Liquors ſo prepared, may and ought to be imployed; for, if the Liquors be prepared out of a vulnerary Plant, it may be more ſafely exhibited then the decoction of any of the Plants of this nature in vulnerary potions; it may alſo be mingled in injections, uſed in plaiſters, unguents and digeſtives, which are applyed to wounds or ulcers: but with this condition, that the body of theſe Remedies be compoſed of Honey, yolks of Eggs, Turpentine, Myrrhe, or any other Balſamick body, which may rather prevent accidents in the wounded parts, then to cauſe a purging and painful colliquation, ever contrary to the good intention of Nature, and much more of the true precepts of the commendable and learned Chirurgery. In this excellent part of Phyſick, *Paracelſus* hath chiefly excelled, as, without any gain-ſaying, it may be proved by thoſe his two excellent Treatiſes, which he doth entitle *The great and ſmall Chirurgery*. Moreover, if the Liquor be extracted from a Thoracical Plant, it may be mingled in the Julips and Potions, which are to be exhibited to the Patients, affected with any infirmity of the Breſt. If it be prepared from a Diuretick or Antiſcorbutick Plant, it may be given for obſtructions in the Spleen, Meſentery, *Pancreas*, Liver, and other neighbouring parts: or, it may be employed againſt gravel, retention of Urine, and other diſeaſes of the Reins and Bladder: to conclude, if this Liquor draws its vertue from any Alexiterial, Cordial, Cephalick, Hyſterick, Stomachal or Hepatick Plant; it may with very good ſucceſs be given againſt Venoms, and all Agues, which may draw their original from venom; if the Plant be alexiterial, it may be given agaiſt all Lypothymies, or Swoundings, if the Plant be cordial: and if Cephalick, againſt Epilepſie, threatnings of Apoplexy, Palſie, and all other diſeaſes and affections of the Brain. If hyſterical, it will wonderfully conduce againſt all Suffocations or Fits of the Mother, raiſings, Convulſions, and all other irritations of this dangerous creature, living, as it were, and moving within another. If it be ſtomachical, it will extreamly conduce to hinder all corruptions which are generated in the bottom of the Ventricle, whether proceeding from the defect of digeſtion, by reaſon of the ſuperfluity, or from the vice and evil quality of nutriment; or occaſioned by evil fermentation. Finally, if the Liquor be impregnated with the vertue of an hepatical Plant; if it be true, that the Liver is the receptacle and ſource of the bloud; it ſhall be adminiſtred in all the diſeaſes which are attributed to the vice and defect of this entrail: but chiefly in growing Dropſies, and their very birth, as even in thoſe which are thought to be confirmed and grown. The *Doſis* of theſe Liquors, and Tinctures truly Balſamical and friendly to our nature, is from ℈ ß to ʒ i. and ʒ ij. according to the age and ſtrength of thoſe to whom they are preſcribed by the skilful Phyſician. Let us add nevertheleſs one advice more, that thoſe which ſhall prepare theſe Liquors, may alſo preſerve them long without any alteration or diminution of their ſtrength, vertue or efficacy: which is done by mixing only ℥ iv. of Sugar in Powder, to ℔ i. of Liquor, if it be to be uſed inwardly, ℥ iv. of Honey boiled with white and deſpumated Wine, if to be uſed outwardly in Chirurgical Operations.

Of the Uſe and Vertue of the Q. E. of Plants.

THE *Q. E.* of Plants may be uſed in every thing, wherein we have ſaid, that their Liquors were uſeful. But there is that remarkable difference, that as theſe noble Remedies are much purer and exalted, then the Liquors which are more corporeal, ſo muſt alſo their *doſis* be very much leſſened: ſo that what was given by drams, before this high degree of preparation, muſt be now only given by drops: The *doſis* then is from iij. drops to xx. raiſing by degrees. This Remedy may be taken in white Wine, Broth, decoction, or ſome kind of Water, which may ſerve as a vehicle to the Medicine, to render it more active and penetrating by the ſubtilty of its parts, even into the laſt digeſtions, to expel the evil, obnoxious, and uſeleſs part thereof, reſtore decayed ſtrength, and finally bring Nature back again into his true path, to direct the health and preſervation of every individual ſubject.

But we will demonſtrate, that it is not without reaſon *Paracelſus* ſpeaks of the Preparation of Quinteſſences in the Treatiſe by us above quoted, *De Renovatione & Reſtauratione.* This great Philoſopher concludes his Treatiſe by the method of preparing Quinteſſences of four ſeveral ſorts, *viz.* Quinteſſences of Minerals; precious Stones; Plants and Liquors, which are Sulphurs and Bitumens: he hath not been contented with a Theorical Diſcourſe of poſſibility of renewing and repairing our internal and external defects; but hath alſo added the practice and way of operation, upon ſeveral matters, to extract the Quinteſſences thereof, and finally doth conclude, by the manner of uſing the ſame to attain renovation of nature. He ſaith then, that it will ſuffice, to put as much of this precious liquor in white Wine, as there will be need to colour it with a colour near that of the remedy; and thereof give a Glaſs every morning faſting to him, or her which ſhall feel a deficiency by age, or infirmity of ſickneſs. Moreover, he gives the ſigns of the beginning and progreſs of this renewing, and the time when the uſe of this admirable Medicine muſt be put by: for, he thought it unneceſſary, to mention the ſigns and obſervations which are to be heeded, when it is taken for ſome ſenſible and apparent diſeaſe; ſince it neceſſarily follows, that the uſe thereof muſt be continued, until the Patient finds alleviation, or the diſeaſe falls away, and then muſt ceaſe conſequently the uſe of the Remedy. But as for the ſigns of renewing, he delivers them in a judicious order, as if he would prevent the incredulity of thoſe which know not the power nor ſphere of activity of the vertue and efficacy which God hath placed in natural Beeings, when by the help of Art they are reduced to their univerſal Principle without loſs of their ſeminal goodneſs: or to prevent alſo the aſtoniſhment of thoſe which ſhall make uſe of it, ſince what ordinarily happens, in the taking of this Remedy, cauſes no little ſurpriſal, when the perſon that uſes theſe Remedies, ſees in the firſt place all his nails fall off from feet and hands, and next all the hair of the body, and then the teeth; and laſt of all, the skin to ſhrink and wrinckle, and drying inſenſibly to fall as all the reſt, which are all the ſigns he gives of internal renovation, by that which is performed outwardly: For, it is as if he would inſinuate, and give us to underſtand, that of all neceſſity, the medicine muſt have penetrated through all the body, and repleniſhed it with new vigour, ſince the external parts which are inſenſible, and as the excrements of our digeſtions fall of themſelves without any pain: But you muſt note, that he cauſes the uſe of the Remedy to be intermitted, when the laſt ſign, *viz.* the drying

ing of the skin doth appear, the wrinckles and the falling thereof, becauſe it is an univerſal ſign, that the action of renewing hath ſufficiently extended it ſelf through the whole habit of the body, which the skin generally covers over, and that ſo it was neceſſary, that this old rind ſhould fall, and another grow in the place, becauſe the firſt was not ſufficiently porous, or permeable, to cauſe the natural heat which is renewed, to drive outwardly all the ſuperfluities of digeſtions, which are the occaſional internal and external cauſes of moſt ſickneſſes in the humane body.

I know this Remedy, and the renewing and reſtoring vertues which are attributed to it, will paſs for ridiculous amongſt the vulgar ſort of the learned, and even amongſt thoſe that pretend to the myſteries of Phyſick; partly, becauſe Cloſet Philoſophy is not capable to apprehend this great *Arcanum Naturæ*; partly, becauſe they will not, for the moſt part, be convinced by any proof or experimental demonſtration. But I will, to convince them, bring here two remarkable examples; the one drawn from what naturally happens every year, by the renewing of ſome kind of creatures in one ſeaſon of the year only; the other from a true Hiſtory of what happened to one of my beſt friends, which took Quinteſſence of Balm Mint to a woman paſt the age of ſixty, which took ſome alſo; and finally, to a Hen which did eat Corn ſteeped in ſome drops of the ſame Quinteſſence.

As for the firſt example, there is none but knows the renewing of the Stags-head, as alſo the skin of Serpents and Vipers; without mentioning that of the Bird, called by the *Latines*, *Halcyo*, or the Kings-Fiſher, the Hiſtory of whom *Paracelſus* makes in the Tract before-mentioned. But of all thoſe which agree in the fact, very few do know, or care to know how, and by what means, or for what reaſon it is done. For firſt, as for the Serpents in general, it is to be conſidered, they remain hid under ground, or in the holes of Trees and Rocks, or lodg'd among rubbiſh and ſtones, from the end of Autumn, until very far in the Spring, and ſo during that time, they are as benummed and dead; their skins become thick and hard, and loſes even its poroſity to preſerve the better the Animal whom it incompaſſes; for, if there happened a continual tranſpiration, there would be alſo a deperdition of ſubſtance: now after the Serpents are in the Spring of the year got out of their holes, and have begun to feed, and live upon the tender ends of Herbs, in which is a renewing vertue: this creature being immediately excited by a pricking and ſhooting which ſhe feels about the compaſs of the head, by reaſon of the Spirits heated and actuated by this natural remedy, ſhe rubs and beſtirs her ſelf, until ſhe hath got off her old skin from about her head, which ſhe continues to do all the reſt of the day, till ſhe hath caſt away all her old garment; which was not only needleſs, but want of poroſity and tranſpirability might have ſuffocated her. Then doth ſhe appear all glorious, and as it were renewed; which is perceived not only by the difference between the ſlow and lazy motion of thoſe which are not renewed, from thoſe which have caſt their skins; whoſe motion is ſo quick and nimble, that eaſily they ſcape our ſight. And moreover, the skin of the old ones is deformed, and of an earthly colour; whereas the other, to the contrary, is poliſht, fair, ſhining and well coloured. As for the Stags, the caſting of their head is done in another way, and for another reaſon then that of the Serperpents: for, that Creature doth not hide it ſelf in the ground; nor renews not all its external parts, ſince he caſts nothing off but his head in the Spring: but the reaſon is his being, during Winter, deprived of ſufficient nouriſhment, and made unable to maintain this wonderful production he bears upon the head, ſince even he wants a due ſupply for his own ſubſiſtence and life, then ſay the Huntſmen, that the Stag (by a Gallicíſm) is faln into poverty, which is perceived not only by his leanneſs and weakneſs, but chiefly alſo by the head which becomes dry, ſpongious and deſtituted of ſap, becauſe this Animal hath not a ſufficient vigour, to impart a ſpirituous and ſaline nouriſhment to the head, by reaſon of its want of food, as we have ſaid even now; now, it is this nouriſhment, which gives ſtrength, vigour, and ſuſtenance to the Stags head; for which reaſon, when in the Spring, a good and juicy nouriſhment animates, and heats its body, it cauſes now vegetation in all its parts, and conſequently, and chiefly, in the head, which makes him to caſt it off. We ſhall ſay no more of this renovation, and of the vertue contained in the new Stags-head, and that which is already grown to conſiſtency, and perfection, becauſe we have ſufficiently made mention thereof in the Chymical preparation of Animals and their parts.

But let us come now to the Experimental proof of Renovation began by the uſe of a Quinteſſence, by the relation of the Hiſtory we have promiſed above, and which happened thus. After one of my beſt friends had prepared a Quinteſſence of Balm mixt, and that all the tokens and alterations which *Paracelſus* requires, had ſucceeded according to his hopes, and the truth of the remedy, he could not have a full and true ſatisfaction in his mind, unleſs he made the proof of this great *Arcanum*; to be more fully and better perſwaded of the verity of the thing, and the delivery of the Author he had followed: and as he knew that commonly experiments made upon other bodies will be defective, he made it upon himſelf, and an old woman ſervant he had by him, of about 70. years of age, in the ſame houſe where he lived; and a Hen bred in the ſame place. He then for about 15 days took every day faſting, a glaſs of white Wine coloured with this Remedy; and the very firſt day, the nails of hands and feet begun to ſeparate themſelves from the skin, without any grief or pain, and ſo contined ſtill caſting, until they fell off themſelves without help. I confeſs unto you, that his conſtancy was not great enough, to go through all his Experiment, and that he thought himſelf ſufficiently convinced by this that happened, without being obliged to try any further concluſions upon his own perſon. Therefore he gave every morning ſome of this Wine to this old Woman; who did drink not above 10. or 12. days, and before this time was expired, her monthly courſes came back with a laudable colour, and broke out in a conſiderable quantity, enough to fright her, and make her believe it would be her death; not knowing ſhe had took a remedy capable to renew her to youth; upon which account alſo, my friend durſt not proceed further, as much by reaſon of the fear which had poſſeſſed the old Woman, as by reaſon of what had happened unto him. Having then thus experimented the Effects of his Medicine, both upon man and woman, he would know alſo, what operation it might have upon other Creatures; and ſo ſteeping ſome few grains of Corn in the Wine impregnated with the vertue of the Quinteſſence he gave them, for the ſpace of eight days to an old Hen by her ſelf; and about the ſixth day, ſhe began to caſt her feathers by degrees, till at laſt ſhe remained quite naked; but before the fifteenth came about, ſhe began to recover new feathers, and having got them again, they appeared fairer and better coloured then before; her creſt did riſe again, and ſhe began to lay Eggs as before. Thus much I had to relate upon this ſubject, whereof I draw the following conſequences.

I believe, there is none of ſo perverted a reaſon and depraved intellectuals, which doth not eaſily conceive, that ſince Nature teaches us by all her operations, that to maintain life in living bodies, with all the neceſſary functions of the parts which conſtitute them, their poroſity muſt be preſerved; ſo muſt of neceſſity Art, which is but imitator of Nature, do the ſame to maintain and reſtore the health of Individuals, committed to her care and cuſtody. Whence I do infer conſequently, that the Phyſician and Chymical Artiſt, ought perpetually to endeavour, by the Anatomy which they make of natural Mixts, to diſcover that ſubtile, volatile, penetrating and active part, which is not corroſive, but to the contrary, friendly to our Nature, and may only advance her birth or delivery without conſtraint: And, as I know that there is nothing but the volatile ſulphureous Salts, which may have the power of acting in the manner we have ſaid; ſo muſt they apply all their underſtanding to ſeparate this amiable and friendly agent, and nevertheleſs very efficacious, and untie it as it were from the commerce of the groſs and material body; if they will be the true imitators of Nature, which ever makes uſe of this ſame agent, to conduct all animated bodies to the perfection of their natural predeſtination, unleſs ſhe be hindered by ſome occaſional external or internal cauſe which ordinarily does interrupt the order, œnonomy, and guidance of her ſecret motions, which preſerves the lovely harmony of all animated compounds. This *Paracelſus* hath done, teaching us the manner how to prepare Liquors and Quinteſſences: becauſe, this operation ſeparates the ſubtile part from the groſs; preſerves and exalts the ſeminal faculties of the compound, until it hath rendred it capable to correct and amend the defects of all natural functions; that imitating the example of this great ſearcher of Nature, and according to the Ideas by us given in this Diſcourſe, before we come to the particulars of the parts of Vegetables, and all the operations to which they are liable by the proceſſes of Chymiſtry; all thoſe that ſhall really addict themſelves to theſe noble operations, may be prevented with a general knowledge of their parts, whether groſs or ſubtile, and conducted alſo and regulated in their judgment and actions, according to the notions and theorems we have imparted, which they may by the direction of their intentions appropriate to each Vegetable in particular, that ſo the Artiſt may ſatisfie the expectations others have of her, and himſelf alſo, to the illuſtrating and innobling his Profeſſion; and, that which muſt be his principal end, to the preſervation and reſtoration of his neighbours health.

Second Diſcourſe of Syrups.

WE have ſufficiently, in my opinion, inſinuated the various nature of Plants, and the difference of their parts in the foregoing Diſcourſe, to prepare the mind of our Artiſt, to an acknowledgement of that truth we are now to declare, in that which we now begin, to correct and reform; and, if it be poſſible, take away the

abuſe

buſe and evil preparation, which the greateſt part of Apothecaries do practiſe, when they work upon Syrups, which are either plain or ſingle, or compounded: and are nothing elſe, but Sugar or Honey boiled to a certain liquid conſiſtency, either with diſtilled Waters or Juices, or with decoctions alſo of whole Plants, or of their own parts, as leaves, flowers, fruits, ſeeds and roots. But, as we have taught above, the divers nature of theſe parts, to be taken notice of by the Artiſt when he intends to diſtil them; ſo do we refer there alſo the Apothecary, which pretends to Chymiſtry, to be inſtructed in the way of his operation, when he intends to make his Syrups either ſingle or compounded. Nevertheleſs, as I know, that all Diſpenſatories are defective, and commit the ſame faults in the preparation of their Syrups, and that but one Hermetical Phyſician hath attempted to correct them; I think my ſelf obliged to follow the example of Mr. *Swelfer* Phyſician to the Emperour, which hath made very learned Notes, upon all the defects of the ancient Pharmacy: but as he writes in *Latin*, and doth reaſon as an Hermetical Philoſopher, I have thought my ſelf obliged to direct into the right way, thoſe which either through want of that language, or of skill in Chymiſtry, to apprehend the ſenſe of ſo learned an Author, do ſtride, and go out of it: Moreover to exhort thoſe, which are endowed with the *Latin* tongue, and have ſome perſwaſion of being skill'd in the Myſteries of Chymiſtry, not to bury their talent, but rather improve it to the advancement and benefit of ſick people, the diſcharge of their conſcience, and particular benefit.

We muſt notwithſtanding ſet down here, ſome few examples of faults committed heretofore in this part of practice, prove the Error, want of a true apprehenſion of the things; and finally teach the way how to do better, adjoyning poſitive reaſons, which may have their foundation in the thing it ſelf and the manner of working, and why that operation proves better, and is more ſucceſsful.

Before we come to the proof to which we have engaged our ſelves, it is neceſſary we ſhould ſhow the ſcope both of ancient and modern Apothecaries in the compoſition of their Syrups, either ſingle or compounded, whereof they have left us the deſcriptions in their Antidotaries and Diſpenſatories. All the true ſons of Art, have from all time held this Maxim; that in all Remedies three conditions were required, *viz.* that they ſhould be capable to operate quickly, ſafely, and pleaſantly, *cito, tuto, jucunde*: Moreover, another of their endeavours was, that what they did prepare, might preſerve for ſome time its own vertue within it ſelf, to be uſed when opportunity ſhould offer. Upon this ground have they brought in Sugar and Honey, ſeparated, or both together, in the compoſition of their Syrups, and other Remedies of the like nature. So then have they made uſe of theſe two Subſtances as of two Balſamick Salts, which might be fit to receive and preſerve the vertue of diſtilled waters: as that of Roſe-water in their Syrup, or Alexandrine Julip: that of the Juices of Plants or Fruits, as that of Wine, Vinegar, Juice of Quinces, Limons, Oranges, Pomgranats, and many other, in thoſe Syrups which they preſcribed the Apothecaries ſhops to be ſtill furniſhed with: that of the infuſions of Wood, Roots, Seeds and Flowers, whereof they have made ſeveral preſcriptions of Syrups: And finally, that of Decoctions of great ſtore of all theſe things mixt together, as aromatick Subſtances, Flowers, mucilagenious Fruits, lacteous Seeds, ſlimy and jellyed Roots, and thoſe that abound with volatile Salts, whereof they have given us the method to prepare compounded Syrups. But, as the greateſt part of thoſe, who have pretended to will, and to be capable to teach Apothecaries, their Art and *modus faciendi*, have been ignorant themſelves in the differences or diſtinguiſhing of their matter, and want of being vers't in Chymical operations, have not known the ſeveral ways of extracting their vertue without loſs; ſo is it not to be admired, if Apothecaries who have followed them, and every day yet follow them, are fallen into groſſer Errors then themſelves, ſince for the moſt part they perform but very imperfectly what they find in their Books.

Our refuge then muſt be to Chymical Phyſick, which ſhall preſcribe us the rules that from henceforth may hinder Phyſicians and Apothecaries, if they will be guided by them to commit the like faults, and if they benefit themſelves by the examples and doctrine which we are about now to preſcribe them, whereby methodically to prepare the ſingle and compounded Syrups, without loſing any portion of that vertue which reſides in volatile ſulphureous Salt, and the mixt Salt of Mixts preſcribed by their Diſpenſatories.

We ſhall begin by plain Syrups, and that by degrees: and firſt, by thoſe which are compounded of juices already depurated of themſelves, or which may be ſeparated without fear, that fermentation ſhould be obnoxious to them, ſuch as are acid juices. Then will we treat of ſuch Syrups, as are made with the juices extracted from Plants, and thoſe of two natures; *viz.* Some deſtituted of odour, and participating of a vitriolick tartarous taſt; the other are odoriferous, and participating of a volatile ſulphureous Salt: theſe two ſorts of Juices need a quick and nimble Eye, and much induſtry of the Artiſt in the ſeparation of their impurities, without any loſs of their faculties and vertues, before Syrups are made of it; which without the Precepts of Chymiſtry, an Apothecary will never be able to perform, then will we end this matter, by demonſtrating the faults hitherto committed, in the preparation of Compounded Syrups, whereof we will give ſome Examples, that all may be made more ſenſible and manifeſt, to him that hath a deſire to improve his knowledge and skill in his Operation.

The manner of preparing the Syrup called Acetoſus Simplex, *or Syrup of Vinegar, after the ancient and vulgar way.*

℞ ℔ v. of clarified Sugar, ℔ iiij. of Spring-water, and ℔ iij. good White-wine Vinegar, boil all according to Art, into a Conſiſtency of Syrup.

It ſeems at firſt ſight that this Preſcription is all full of ingenuity, clear, and agreeable to the rules of Art and Nature; but our Chymical examining thereof, will make it appear, that there are more faults therein then words, and that it is all full of abſurdities, even unworthy of a Chymical Novice, and ſo by conſequent much more of ſo famous and renowned an *Arabick* Phyſician as *Meſue* was, to whom the invention of this Syrup is attributed.

But before we come to note the imperfections of this proceſs, we muſt declare what vertues *Meſue* and his Sectators have attributed to this Syrup, and the *Oxymel Simplex*, and for which Diſeaſes he deſtinated it, becauſe it will not give a ſmall light, to diſcover, how falſe and ill grounded are the indications which they have taken, want of knowing well the nature of things, and being vers'd in the Operations of Chymiſtry.

They attribute, and not without ſome ground and reaſon, to this Syrup, the faculty and vertue of inciſing, attenuating, opening and mundifying; that of refrigerating and tempering the heats proceeding from choler, that of reſiſting to putrefaction and corruptions, and finally of expelling the Urine, and provoking ſweat. I confeſs all theſe vertues may poſſibly be in this Syrup, when rightly prepared: but unleſs it be after our preſcriptions declared hereafter, it will poſſeſs thoſe eminent and ſignal vertues.

I have taken the deſcription of this Syrup from the *Aupsburg* Diſpenſatory, as the moſt correct and exact we have at this day; for had I taken it out of *Bandero*, or ſome other yet more ancient Author, I could ſhew in it much greater and leſs tolerable abſurdity, than thoſe I am now to demonſtrate. What, I beſeech you, is there worſe digeſted, than to preſcribe to boil ℔ v. Sugar, with ℔ iij. water, upon a fire of kindled and flaming Coals, and skimming perpetually to the conſumption of half the ſubſtance, without a previous Clarification, and then to add iij. or iiij ℔ Vinegar, to reduce the whole into a Syrup, ſince Vinegar doth alſo participate of its impurities and froth, and ſo puts the Artiſt to a new skimming. This is, notwithſtanding, the preſcription of *Baudero*.

Others have not ſped better with their clarified Sugar, and deſerve no leſs reprehenſion; for Experience it ſelf doth contradict what they pretend to: For, this Axiom which ſaith, *Fruſtra fit per plura quod fieri poteſt per pauciora, aquè bene vel melius*; ſhews evidently, that it is very ill done, to put ℔ iv. of Water, with the Sugar and Vinegar, to reduce them to Syrup; ſince, beſides that water is here altogether needleſs, I ſay even that for two reaſons it is abſolutely prejudicial: The firſt, becauſe the ebullition of this Water cauſes a great loſs of time, which a good Artiſt ought to value; the ſecond, and which is yet much more conſiderable, is, becauſe the Water doth in the action of boiling too long, carry away in its ſteem, the moſt ſubtle, volatile, and ſaline parts of the Vinegar, from which proceeds the inciſive and aperitive vertue, which is proper and ſpecifical to this Syrup. For, I would fain know, what ℔ iv. of Water can avail to this Syrup, or what vertue communicate unto the ſame: For if it be anſwered, To advance the depuration of the Sugar, and that it was the intenton of *Baudero*: I will ask the reaſon alſo, why the *Diſpenſatory* of *Augsburg*, doth alſo preſcribe the ſame ℔ iv. of Water, ſince it preſcribes to take clarified Sugar; which makes me to conclude, that neither the one nor the other had any reaſon for what they did. Therefore, thoſe that will prepare this Syrup as it ſhould be, with all the vertues and faculties neceſſary unto the ſame, to follow and anſwer the intention of Phyſicians, muſt proceed after the following rule.

℞ an earthen white Diſh, or Jugg-mettle glaſed; which place upon a Kettle or Cauldron of boiling water, which we will call a boiling *B. M.* put in this Diſh ℔ ij. fine Sugar in powder, upon which pour xviij ℥ diſtilled Vinegar in a glaſs Cucurbit rectified in *B. M.* to draw thereof all the wateriſhneſs or phlegm, as we ſhall teach when we come to treat of Vinegar; ſtir the Sugar and diſtilled Vinegar together with a *Spatula* or Glaſs ſpoon, until all be diſſolved and reduced to a Syrup, which ſhall be of a juſt conſiſtency, and long-laſting, and poſſeſs all the vertues required in the acetous plain Syrup. I leave now the Reader to his free choice and judgment, of making this Syrup after the ancient or modern way, and I know that the knowing Artiſt, will ever follow that reaſon and experience which guides him to operate *citius, tutius, & jucundius*; that is to ſay, in the quickeſt, ſafeſt and pleaſanteſt manner: to ſhew that *Chymiſtry* is, and ever ſhall be the faireſt and beſt School of *Pharmacy*. To conclude this examination, note in the way, that ℥ ix. of clear Liquor by it ſelf, or according to the preſcriptions of Art, are ſufficient to reduce ℔ i. to a conſiſtency of Syrup, by a ſimple diſſolution in the heat of the Vaporous Bath; that this may be as a general note, when we come to ſpeak of the other Syrups, either plain or compounded, hereafter.

The general method of making Syrups of Acid things, Fruits, as are thoſe of Juice of Lemmons, Oranges, Cherries, Pomgranates, Barberries, Quinces, Gooſeberries, Strawberries, Apples, &c.

WE have not much to note, upon the preparation of theſe Syrups, becauſe the vulgar Pharmacy doth commit leſs faults in them; yet as there is ſome ſmall obſervations we account neceſſary to the inſtructing of our Chymical Apothecary, we would not paſs them by.

Take then of all theſe Fruits which you pleaſe, and thereof expreſs the Juice according to Art, and the nature of each in particular; with this precaution, to make uſe of no Metallick Veſſel to receive them; taking alſo great care to ſeparate the grains and ſeeds of theſe fruits, becauſe ſome of them are better, and other mucilagineous and ſlimy; and ſo would impart an ill taſte to the Juices, or a ſlimineſs and viſcoſity, which would be prejudicial to the perfecting of the Syrup: And as for thoſe Fruits which muſt be ſcraped, to expreſs the Juice thereof, you muſt have Scrapers of Silver, or Letton well blanched and prepared; for, Iron doth eaſily communicate its taſte and colour, to the ſubſtance of any acid Fruit, as alſo Copper or Letton. All this being exactly obſerved, let thoſe Juices which of themſelves are liquid, to depurate, until they have depoſited a ſlimineſs, or a ground of certain Corpuſcles, which are to be ſeparated by filtration.

tration. But as touching the Juices of ſuch Fruits, which are of a ſoft, ſlow, and viſcous ſubſtance, they muſt be put in a cold place to ſettle, and, as it were, ferment a little, and then the pureſt Liquor ſo clarified of it ſelf, and ſwimming above the reſt, let be ſeparated; becauſe if you proceed otherwiſe, there will rather come a Jelly then a Syrup.

After all theſe Juices have duly been prepared in this manner, as we have now deducted, they muſt be put in a Glaſs Cucurbit in *B. M.* and evaporated to the conſumption of $\frac{1}{3}$ p. or $\frac{1}{4}$, neither ought you to fear, that by this proceſs any portion of the ſharpneſs of the Juice ſhould be loſt, ſince to the contrary it will encreaſe; the acid or ſharp quality remaining ever the laſt, and nothing vapours away but the phlegm, or unneceſſary wateriſhneſs, and moreover this Operation will ſerve to ſeparate the remainder of the feculencies abiding in the Juice: For it is a thing worthy to be noted, that two hours of digeſtion in *B. M.* will ſooner depurate a Juice, then three days of inſolation of the ſame; and, that which is yet more remarkable, the Juices ſo depurated will ſeldom viny, and may be much longer preſerved then others, without any alteration: As for the preparation of the Syrup, you muſt follow the *modus faciendi*, which we have heretofore preſcribed to the Acetous Syrup, *viz.* ℞ ℥ ix. of well prepared Juice, againſt *lib.* j. of powdered Sugar, or the ſame quantity of Sugar boiled into a ſolid Electuary or *Roſat* Sugar, diſſolve them in the heat of a Vaporous Bath, in Earthen glazed, or Glaſs Veſſels, noting ſtill, when you work upon Acids, never to uſe Metal.

The manner of preparing Syrups of the Juices of Plants, as well of thoſe that are deprived of ſmell, as Odoriferous; with the neceſſary Notes for their Depuration.

There are three kinds of Plants which offer themſelves here to our conſideration, and by conſequence three Examples to be propounded, to prepare well the Syrups thereof, with the preſervation of their proper and eſſential vertue, which we will diſtribute into three Claſſes. The firſt ſhall be of inodorous Juicy Plants, ſuch as are the kinds of Sorrel, Chicory, or Endive, Fumitory, Mercury, Purſlane, Borage, Bugloſs *Carduus B.* and other of the like nature. The ſecond, ſhall be of thoſe that are inodoriferous, and ſometimes alſo odoriferous, and whereof the Juice is filled with a Spirit and Volatile Salt, very ſubtle, ſuch as are Antiſcorbutical Plants, as *Cochlea-*

ria Creſſes, the kinds of Water-parſley, Muſtard, Aliſander, or Bell-rags, and Water-purſlane, which is called alſo *Beccabunga*, or rather *Beccapunga*. The third ſhall be of ſuch Plants as are odoriferous and juycy, ſuch as are Betony, Hyſſop, *Scordium*, Smallage, Parſley, Eupatory, and others of the ſame Category.

How the Juyces and Syrups of Plants of the firſt Claſſis *ſhall be prepared.*

TAke the Plant whereof you intend to extract the Juyce, cut it ſmall, and beat it in a Marble or Stone-mortar, wring and expreſs the Juyce with all the care and neceſſary obſervations, which we have hinted in our diſcourſe above, where we treated of the diſtilled Waters of the ſame Plants, and after the Juyce hath been well depurated in *B. M.* and a ſufficient quantity of Phlegm or Water hath been extracted, as two parts from three by diſtillation, then to *lib.* 1. of this Juyce ſo depurated, mix *lib.* 1. *ß.* of Sugar, and boyl it together to a Conſiſtency of *Sugar. Roſar.* Which decoct and reduce to a Syrup, with vi. or vii. ℥. of that water you have drawn out of the Juyce by diſtillation in *B. M.* ſo ſhall you have a Syrup endowed with all the vertues of the Plant; and when you will prepare either Apozems or Juleps, you ſhall mix ℥ i. or ℥ ij. of either of theſe Syrups, with iij. or iv. ℥ of its proper Water, which according to the vertue and quality of the Plant, you ſhall fit to the purpoſe of the diſeaſe. *Nota*, that theſe Juyces ſo depurated by diſtillation, may be kept one or two years without any corruption, becauſe they are ſufficiently filled with the Nitrotartarous Salt of theſe Plants: but they muſt nevertheleſs be covered, or filled up with Oyl, to hinder the penetration of Air, which is the great Alterator of all things; and that they muſt alſo be kept in a place, neither too moiſt, nor too dry.

How the Juyces and Syrups of Plants of the ſecond Claſſis ſhall be prepared.

THe Juyces of theſe Plants muſt be extracted with the ſame precautions we have taught, when we ſpoke of the ſpirits of Plants, their diſtilled Waters and their extracts, whereto we refer the Artiſt, to avoid needleſs and tedious repetitions. But as I have already often ſaid, that Antiſcorbutical Plants were compoſed of ſubtle parts, and had in themſelves a ſaline Spirit, which is volatile, mercurial, and ſulphureous, which eaſily vaniſhes and flies away: ſo muſt the Chymical Apothecary carefully and diligently work in their Preparation after

ter he hath once begun, that by his careleſneſs he may not loſe, what he ought with diligence and ſtudy to preſerve, and can no more be recovered when once fled away. Here is then the only difference, between the preparation of theſe Juyces & Syrups, and the fore-going. That when you diſtil them in *B. M.* you muſt have a judicious regard, to ſet a part ℥ v. of the firſt Water which will aſcend out of every pound of Juyce, becauſe theſe ℥ v. ſhall have carried away with themſelvs the proportion of the Spirit and volatile Salt of ℥ i. Juyce: then continue your diſtillation, until you have drawn away the half of the liquor or moiſture of your Juyce; then ceaſe, and to ℔ i. of this Juyce, put ℔ i. ß. of Sugar boyled to a conſiſtency of Sugar Roſar, and reduce it unto Syrup, by a ſimple diſſolution in cold, with vi. or vii. ℥ of the ſpirituous and ſubtle Water which firſt aſcended, and hath been kept for this purpoſe; ſo ſhall you have a Syrup filled with all the vertues of its Mixt, as eaſily it will appear, and manifeſtly, by the odour and the taſt: but principally, by all the noble Effects it will produce in all Scorbutical diſeaſes, whether you give it ſingle or mixed, with the ſecond Water you have preſerved. You may alſo preſerve theſe Juyces for ſervice, when there ſhall be need in the time that Plants are out of ſeaſon and vigour; uſing ſuch precaution and fore-caſt as is in ſuch a caſe required.

How the Juyces and Syrups of Plants of the third Claſſis, ſhall be prepared.

WE will not loſe time with vain and empty repetitions, ſince it ſuffices us to ſay, that the Artiſt muſt duly prepare his Juyce, to ground his operation upon, as we are now going to declare. When you have the Juyce of any of theſe odoriferous Plants, you muſt depurate it by a ſingle and ſlow digeſtion in *B. M.* to ſeparate the feces and ſcum which ſwims on the top. This Juyce being percolated cold through a Flannel, ℞ *lib.* iiij. thereof, and place it in a Cucurbit, with a blind head over it, or in a double Veſſel exactly joyned: put in this juyce *lib.* 1. ß. of the tops and flowers of the ſame Plant, not beaten in the Mortar, but only cut very ſmall with Cizzars; then cloſe the Veſſels, and lute them with a bladder ſteept in beaten whites of Eggs, and place it 24 hourss in a ſlow heat of *B. M.* After which take away the covering of the Veſſel, and apply to it a Head-Limbeck to extract out of this juyce impregnated with the new vertue and efficacy of it Plants ℥ xx. of ſpirituous and very odoriferous water, this ended, ceaſe the fire, and expreſs what remains in the bottom of the Cucurbit, and preſerve it for this following purpoſe: Put the xx ℥ of odoriferous Water in a double Glaſs, or blind Head, to which you ſhall add ℥ x. more, of the new tops of the Plant upon which you work; which lute and cauſe to digeſt in the ſlow heat of *B. M.* during a natural day; then being let cool, expreſs it ſoftly, that it may not grow thick or muddy, and keep it till you have cauſed that which did remain with the grounds of your expreſſion to boyl, and clarifie it with white of Eggs, and boyled with *lib.* iij. of Sugar, into conſiſtency of Lozenges, which you muſt melt in the cold, or only in luke-warm water, with the twenty ounces of odoriferous water, containing the Mumial and Balſamical vertue of the Plant; and thus ſhall you have a Syrup, in which nothing of what ſhould be in, ſhall be wanting, to follow clearly the intention of Art and Nature. But me thinks I hear the moſt part of Apothecaries alleadging, that this is a way to lengthen the method of making ſyrups, and that no body will care for rewarding the trouble which they will be at, in this exact way of operation: Moreover, that they muſt be obliged to be at the charge of a *Balneum Maris* and glaſs Veſſels, which are neceſſary to digeſtion and diſtillation, that theſe Veſſels are brickle; and that, all things thus conſidered and caſt up together, the price of their remedies muſt then be ſet at higher rates: and beſides this, that others which are not ſo circumſpect, will give their ſyrups at the common rates, and that people run moſt commonly where they find things cheaper, without examining the worth or goodneſs of them, and that this is the way to ruine their ſhops quickly, and loſe cuſtomers. To all theſe objections, which are not without ſome ground, we anſwer. Firſt, as concerning the *Balneum Maris*, it hath no ſuch matter to be ſtarted at in it ſelf, but the name, to ſuch as know the nature thereof: for a Kettle only may be made uſe of to all the purpoſes and neceſſary uſes of their ſhops. Secondly, Concerning the Veſſels, What Artiſt is not obliged to be provided with them for other diſtillations, if they will duly diſcharge their Calling, or at leaſt make a ſhow thereof? And if they fear breaking, they may have Cucurbits of Jugge-mettle, or white Earth for acid ſubſtances, and of Copper tinned for other matters; but this will not be without ſome inconveniency, in reſpect that they ſhall not be able to judge of the depuration of the ſubſtances, nor the remaining quantity or conſiſtency, where theſe things are to be obſerved, by reaſon of the opacity of their Veſſels. But the laſt conſideration is prevalent over all the reſt; and thar is, that every one is obliged by the Oath he hath taken in his admiſſion to the Profeſſion of Pharmacy, to exerciſe it with all care and exactneſs, and the diſcharge of his Conſcience. This laſt ſcope then muſt prevail over all the reſt, and be inſtead of a ſpur and bait of well doing: for thereby ſhall they find the recommendation of Phyſicians; and their candour and aſſiduity being known, will draw upon them the eſteem and affections of ſuch as do love the preſervation of their preſent, and reſtoring of their paſt health. Let us then go on in diſcovering ſome more of the Errors of ancient Pharmacy, and being not contented to prove they have done ill, let us ſhow how they may do better. To this end, we will deliver three examples more, of ſingle Syrups, *viz.* of odoriferous Flowers, of Rinds of the ſame nature, and of aromatical Subſtances: That when Apothecaries ſhall prepare any Syrups of this kind, their ſhops may not be ſmelt, at three or four hundred yards diſtance, which is an infallible token of the deperdition of the Eſſential vertue of the Volatile and Sulphurous parts of the Flowers, odoriferous Rinds, and aromatical Subſtances wrought upon: unleſs theſe Apothecaries by a vain and prepoſterous policy, and very prejudicial to the publick and themſelves, take a delight in having their ſhops ſmelt from afar off. And as contraries by the oppoſition of their contraries are more illuſtrated; we ſhall firſt declare, how the fault is committed, ſecondly, wherefore; to teach in the third place, and explain to the underſtanding Reader how to do better.

The old proceſs or manner of making Syrup of Orange Flowers.

℞. *lib.* ß. of new Flowers of Orange: infuſe them in *lib.* ij. of clear and clean warm Water, during 24 hours: after which make the expreſſion thereof, then reiterate the ſame infuſion twice, with *lib.* ß. of new Flowers at each time; the expreſſion and colature being done, boil ℥ xx. of this infuſion in Syrup with *lib.* i. of very white Sugar. *Nota* here once for all, that the weight I underſtand here, is not the Phyſicians weight, but the ordinary one of Merchants of ℥ vi. to the *lib.* Before we ſhow the deficiency of this preſcription, we will relate the vertues attributed to the Syrup proceeding from the ſame, that we may the better make it plain who is in the wrong, who in the right. It is then attributed to this Syrup, marvellouſly to recreate the Heart and Brain, to reſtore Spirits, provoke Sweating; and to be conſequently very ſoveraign againſt malignant and peſtilent diſeaſes, becauſe it drives the infection of this venom from the center of the parts, where it lurketh to the circumference, and makes the ſpots to appear. All which may be true, if the Syrup be made according to due proceſs. But the Phyſician is fruſtrated of theſe noble Effects, by the evil and wrong preparation which we have juſt now quoted; ſince nothing is left to the Syrup ſo prepared but an ungrateful bitterneſs, which proceeds from its material and groſs Salt, inſtead of that pleaſant quickneſs to the taſte it ought to have; and that ſubtile and delicate ſteem which is diſcerned by the Smell: which is properly a token, that this Syrup is not deprived of its volatile ſulphureous Salt, in which are placed all the vertues required and hoped from it. But the coction of this Syrup which cannot be performed without boiling, carrys away all that ſubtile vertue which occaſions it, not to anſwer the indications of the learned and experimented Phyſician, and much leſs the hope of the Patient.

The Chymical and genuine Preparation of Orange-Flower Syrup.

℞ *lib.* i. ß. Orange-Flowers, gathered a little after the riſing of the Sun, place them in a Glaſs Cucurbit, and beſprinkle with ℥ ij. of good white Wine, and as much excellent Roſe-water, cover the Veſſel with its head Limbeck, exactly luted in the Joynts, and being placed in *B. M.* draw off from it, by diſtillation made with graduate fire, ℥ viij. of Spirit or ſpirituous Water, which will be very odoriferous and ſubtile, which keep by it ſelf: then continue the fire, and draw a ſecond Water, until your Flowers be almoſt dry, then ceaſe the fire, and boil your remaining Flowers in *lib.* ij. of common Water, to the conſumption of *lib.* j. Expreſs this decoction filled and impregnated with the extract and fixt Salt of the Flowers, clarifie it with white of Eggs, and boil it to a conſiſtency of Sugar Roſat with *lib.* j. of Sugar, which you ſhall diſſolve afterwards with ℥ viij. of the ſpirituous Water, and that in the cold: and you ſhall have the true Syrup of Orange-Flowers, truly impregnated with all their vertue. The ſecond Water extracted will ſerve for a Cordial and Alexiterial Water, to mix with the Syrup, when the Phyſician ſhall preſcribe it. And this Preparation may ſerve as a model, to prepare the Syrups of other Flowers, which are, to come near to the nature of Orange-Flowers. We follow now, to give an example of the Syrup of odoriferous Rinds, and we take for our example that of Limon.

The old way of Preparing Syrup of Limons.

℞ *lib.* j. of the outward Rind of new Limons, ʒ ij. of grains of Scarlet or Kermes, and *lib.* v. of common Water; boil all together to the conſumption of two p. Strain it, and add *lib.* j. of Sugar, which reduce to the juſt conſiſtency of a Syrup. Which aromatize with iv. grains of Musk. This is their manner of preſcribing and operating, altogether unworthy of a true and good Phyſician, as we ſhall make appear by the vertues which they attribute to this Syrup, and by their ingenuous confeſſion, that the good ſcent is altogether neceſſary to elevate it, and make it attain to that high degree of vertues which are by them attributed unto it, and are theſe; to ſtrengthen the Stomack and Heart, to repel and correct putrid and corrupt humors of the Ventricle, to take away ill breath, to reſiſt venomous and peſtilential diſeaſes, prevent or remedy the beating and palpitation of the Heart, and diſſipate ſadneſs and melanchollу. All theſe vertues are proper and eſſential to the volatile ſulphureous Salt of Limon Rind, as moſt worthily doth witneſs its odour and pleaſant taſte.

But let us ſee, how theſe pretended Maſters imagine they can introduce and preſerve this taſte and ſmell in the Syrup which we ſpeak of, or in a Julep of Sugar and Water, boiled together to a conſiſtency of ſyrup. They preſcribe to put in the one or the other, a judicious quantity of the external Rind of Limon, without ſaying, whether it it ſhall be done in cold or warmth; ſince, if they ſhould even have this fore-ſight, it would be to little purpoſe: for, if the Rind be put in warmth, the ſmell and volatile Spirit will immediately vaniſh away, and there ſhall remain but an odour and taſte of Turpentine; if in cold, the viſcoſity and clammineſs of the Syrup, loaded with the bitterneſs and extract of the Rind, ſhall not be able to receive, nor be capable to extract that vertue which is pretended to be introduced in it, though very ſubtile of it ſelf. They had nevertheleſs done much better, if they had preſcribed to the Apothecary, to expreſs with his fingers from the Rind, the oleagineous part hidden in it, and impregnate therewith a quantity of Sugar very fine and finely powdered, until it begins to melt, and ſo to end the diſſolution of this Sugar with a little juice of Limons well filtrated; and thus aromatize their Syrup already boiled with this pleaſant and odoriferous Liquor. But this manner of Preparation is not yet worthy an ingenuous Artiſt or Chymical Apothecary. He ſhall then proceed herein after the following manner.

The manner of preparing artificially the Syrup of Limon-Rind.

℞ *lib.* ß. of the external thin Rind of new Limons; cut it very ſmall with a Knife or Cizzars; and being placed in a Glaſs Cucurbit, beſprinkle it with *lib.* j. ß. of good white Wine, or, that which will be much better, in as much Malmſey or good *Spaniſh* Wine; keep it a while in digeſtion, and then extract by diſtillation, with thoſe precautions we have already declared, ℥x. or ℥xij. of Spirituous Water, of a very ſubtile or odoriferous Spirit, withous any other addition, if it be for Women, by reaſon of the Mother, which can neither endure the odour of Musk, nor that of Amber. But if it be for men or women not obnoxious to hyſterical paſſions, put into the noſe of the Limbeck, you imploy for this diſtillation, a knot of Silk-cloth, wherein is tyed ℥ß. of grain of Kermes not too old nor Worm-eaten, viij grains Ambergrice, and iv. grains of Musk; and ſo the firſt vapours which are very ſubtile, penetrating and diſſolving, being condenſed in Liquor which ſhall diſtil by this Noſe, ſhall carry along with them the tincture, odour and vertue of theſe three Subſtances, and ſo impregnate and perfume all the reſt. This done, put ℥iij. more of Limon Rind, very ſuperficial, thinly pared, and ſubtile, and very ſmall ſhred to digeſt in cold in the ſpirituous water which you firſt drew: run without expreſſion this maceration through a Linnen clean and fine, and preſerve it in a Vial well ſtopt, till you have boiled in *lib.* ij. of common Water the Rind which you had left from the diſtillation, and that of the expreſſion alſo, until the Liquor be reduced to half, which then ſtrain clarifie, and boil to a Sugar Roſat, with *lib.* j. of very white Sugar, which afterward you are to decoct in a conſiſtency of Syrup, with the requiſite quantity of ſpirituous eſſenſified Water. This Syrup muſt be preſerved carefully, becauſe it is as uſeful in time of health as of ſickneſs: for a ſpoonful of this ſyrup mixt with white Wine, or Sugar and Water, compoſes a kind of pleaſant and odoriferous *Limonado*, and thoſe that will make this drink more acceptable, giving it a ſharp pleaſant quickneſs, may joyn to it the juyce of Limon, or ſome drop of ſpirit of ſulphur or of Vitriol, if it be in ſickneſs, and that not without the preſcription of a Phyſician. From the example of this ſyrup, may be drawn the manner of making alſo that of Orange, nor leſs uſeful then the fore-going, and chiefly for women; and thoſe that are ſubject to Indigeſtions and Cholicks. We come now to the third example of our Aromatical Subſtances.

The

The vulgar Preparation of Syrup of Cinamon.

℞ ℥ ij. ß. of fine and ſubtile Cinamon, *i.e.* of a penetrating and biting taſte, make it into groſs Powder, and digeſt it with *lib.* ij. of good Cinamon Water, by the ſpace of 24. hours in a Glaſs Cucurbit in a warm place; the Veſſel being ſo well ſtopt, that nothing may tranſpire; then ſtrain and expreſs it, and put again ℥ ij. ß. more of new Cinamon in infuſion, as long as the firſt, which keep alſo; and thus continue and reiterate the ſame operation four times; keep this infuſion impregnated with the vertues of the Cinamon by it ſelf; then take the Cinamon remaining after the expreſſions, and infuſe upon it *lib.* j. of Malmſey, or ſome other Wine ſtrong and generous; then extract all the Liquor by a ſtrong expreſſion, and joyn it to the preceding infuſion, with ℥ ij. of very odoriferous Roſe-water, & *lib.* j of Sugar, and boil them together in a well cover'd Pot, to the conſiſtency of a ſyrup.

I know there is none ſo little acquainted with Cinamon and the parts which adminiſter and contain its vertue, as alſo of other Aromatical Subſtances, but chiefly, that of Cloves; who doth not admire, and pitty this ridiculous and ſimple deſcription, of one of the nobleſt and moſt excellent Syrups which an Apothecary can prepare or keep his ſhop furniſhed with, and which all the Authors of it do deſtinate to the refreſhment and repairing of vital Spirits; to retrive the vital heat, and reſtore it to the Heart and Stomack, when driven away from it by ſome mortal cold; correcting alſo the ill breath of the Mouth, and the correction of the Ventricle; to help digeſtion; and finally, to repair and preſerve all the ſtrength of the body. I know, I ſay, that none never ſo little verſt in the Art of diſtilling, and extracting the æthereal ſubſtance of aromatical bodies, but particularly of Cinamon, cannot, but have an averſion to ſo defective a preſcription, taken from a Diſpenſatory wherein ſo many grave Doctors have had a hand. All the vertues attributed to the ſyrup of Cinamon are real and true, provided they be preſerved: But let us, I beſeech you, examine a little, with what fine and judicious precaution, the Authors of this preſcription have laboured to do it. They ordain to the Apothecary to boil this Syrup in an earthen Pot exactly ſtopped; but conſider, that at the ſame time they preſcribe the ſtopping of the Veſſel, they would have the contained matter to be boiled to a conſiſtency of ſyrup, which cannot be done, but by the ſlow evaporation of the ſuperfluous Liquor, or by its ebullition. If then the cover of the Pot hath an edge inlaid in the other, and ſo juſt and exactly fitted and ſhut up, and the Joynts ſo well luted, that nothing can tranſpire, the Artiſt or Apothecary ſhall never attain their end, which is to make a Syrup, according as they are preſcribed to do, ſince there will be a perpetual circulation of vapours from the bottom to the top; for what ſhall riſe from the bottom, ſhall condenſe in the top of the cover, and thence fall back again, without any hopes to attain this way to the conſiſtency of a Syrup. There muſt then of neceſſity be ſome expiration, and even ſome ebullition, to conſume *lib.* ij. ß. of ſuperfluous and ſuper-abounding liquor, whereby to give a body and conſiſtency to the Syrup. Now, would it not be a very great damage, and a conſiderable loſs, to let evaporate and fly away in the Air *lib.* ij. ß. and more of a ſpirituous Water, of a very fragrant ſmell, very pleaſant taſte and great efficacy. Yet theſe erroneous proceſſes and operations can only be corrected by the help of Chymiſtry, ſince it is by her means we come to know, that Cinamon poſſeſſes in it ſelf, as all other aromatical bodies, a volatile ſulphureous Salt, ſo ſubtile that the leaſt heat is capable to extract it and drive it away, if the Artiſt doth not obſerve to ſtop with a great exactneſs, as he ought to do, not only the joynts of the Limbeck, but alſo of the noſe wherein it joyns with the mouth of the Recipient, otherwiſe he ſhall loſe the moſt ſubtile and efficacious part of the ſaline Spirit of the Cinamon, accompanyed with that of the Malmſey, or whatſoever other Wine, the Artiſt doth make uſe of.

Let us now proſecute to demonſtrate the extreme impertinency of this deſcription, by adding ℥ j. of good Roſe-water upon ℥ x. of Cinamon, and *lib.* ij. of good Water of Cinamon, and *lib.* j. of Malmſey; and that which is yet more ridiculous, is, that the odour of this Water muſt vaniſh away with the ſubtile and volatile part of the other. But it may be objected to this, That Sugar, which is a vegetable Salt, of a median nature between fixt and volatile, ſhall be capable to fix and detain by it ſelf the volatile Salt of Cinamon; and ſo without reaſon do we inveigh againſt this ſyrup, ſince this uniting mean is capable to preſerve the vertue of what enters in its compoſition. But though, this argument ſeem to be full of ſtrength, and even hath very much in it, we will nevertheleſs illuſtrate the truth without deſtroying the ſame, and that by the following diſtinction. We do then diſtinguiſh between warm Sugar, and between Sugar cold; for we confeſs indeed, that Sugar reduced to a ſubtle Powder, is capable to receive in it ſelf the æthereal Oils of aromatical Subſtances, and alſo all other diſtilled Oils, that it is even capable to unite them, and mix them indiviſibly with the Spirits and Waters, which is none of the leaſt ſecrets of Chymiſtry: But we abſolutely deny this union and mixture to be poſſible in warmth, even in the leaſt heat; and ſo much leſs by conſequent in that heat which is requiſite to the boiling of a ſyrup, where it is neceſſary to evaporate above *lib.* ij. of ſuperfluous liquor. The intention we had to elucidate truth more and more, hath obliged us to deduce this matter ſo much to the full, and to ſhow evidently the abſolute neceſſity of the intervention of Chymiſtry, which is the fitteſt Miſtreſs to teach how truly to operate in all the Preparations of Pharmacy.

The Preparation of Syrup of Cinamon according to the Precepts and Preſcriptions of Chymiſtry.

THis Syrup may ſerve for a pattern and rule to make all other Syrups of aromatical bodies, of which it would be needleſs to give the particular preſcriptions, ſince this may be *inſtar omnium*.

℞ ℥ x. of very good Cinamon cut very ſmall, and put in a Glaſs Cucurbit, upon which pour *lib.* iij. of good Malmſey or *Spaniſh* Wine, or ſome other kind of generous and ſpirited Wine, and *lib.* i. of very good Roſe-water, cover the Cucurbit with its Glaſs Body, the joynts being exactly luted, put it in *B. M.* and adaptate thereto a Receiver, which you ſhall lute to the Noſe of the Limbeck very exactly; give firſt a gentle fire of digeſtion the ſpace of 12 hours; then increaſe, till the diſtilling drops follow cloſe one the other, heeding nevertheleſs, that the Head of the Limbeck ſhould not grow too hot: but may be ſo, as the hand may endure it. Continue thus until the Cinamon in the bottom appears dry; then ceaſe, and put by the Cinamon. Reiterate your operation with like quantity of freſh Cinamon, pouring upon it the Water firſt extracted, and diſtil as you did at firſt reiterate it until the third time; and having ended, put your Water in a Bottle well ſtopt with waxed Cork, and cover it with a wet Bladder, leſt that it ſhould loſe and exhale away the beſt and ſubtileſt part of its vertue. Then take afterwards all the remaining Cinamon, put it in a Cucurbit, and pour upon *lib.* iv. of common Water; cover it with its Head; lute, and diſtil in Sand, and draw off *lib.* j. ß. that in caſe any volatile and virtual ſubſtance ſhould remain in the Cinamon, it may be drawn off again without loſs: This laſt Water ſhall ſerve in the Laboratory for the laſt lotion of Magiſteries and Precipitates, as alſo for the extraction of ſome Tinctures. Strain and expreſs all the liquor impregnated with the extract and fixed Salt of the Cinamon, clarifie, and then boyl to the conſiſtency of Lozenges, with *lib.* ij. of refined Sugar, which you muſt diſſolve in cold, with *lib.* j. of the ſpirituous water before received: This ſyrup muſt immediately be put in a well ſtopt Bottle, that what you have preſerved with ſo much labour, may not be loſt. It is a treaſure and preſent remedy in all weakneſſes: but chiefly, in long and difficult travels of women, where their ſtrength is exhauſted, and they conſequently deprived of the beſt part of their ſpirits and natural heat: and as there is no Vegetable that poſſeſſes more of ſpirits than Cinamon, and principally, being animated with the ſpirits of Wine, all that vertue is found concentrated in this ſyrup by an admirable harmony; ſo, that is capable to produce all the effects we have attributed unto it. The *Doſis* is from one half to one and two ſpoonfuls. They that ſhall deſire to make this ſyrup yet more excellent, muſt put in the mouth of the Limbeck ℈ j. of Ambergrice, mixt with ʒ j. of true wood of Aloes reduced to Powder, and ſhall diſtill over again *lib.* ß. of their beſt Cinamon water, whereof they ſhall make the ſyrup which will be much more efficacious.

We will end this Diſcourſe concerning Syrups, by the notes and obſervations we ſhall make upon compounded Syrups: becauſe that as they are deſtinated to ſeveral ends, ſo are they compounded with different matters, which do require a different manner and way of preparation. But before we enter into our matter, we muſt ſay ſomething that may affect the mind of the Reader, and open his underſtanding, whereby we may alſo inſtruct thoſe that apply themſelves to the ſtudy of the nobleſt Pharmacy. And to begin, I will ſay: that Natural Phyloſophers, which are the ſoundeſt Judges of things, do aſſure us, that all whatſoever receives, doth receive according to its proper way of receiving, *Secundum modum recipientis*; and not according to the way of the thing received, *Secundum modum recepti*, which is to introduce ſome new quality in the Recipient. If this Phyloſophical Axiom is true in it ſelf, as no body of ſound judgement can doubt of it; it will chiefly appear to be ſo, and we will make it evident herein. Becauſe no Apothecary can make a compounded ſyrup, without extracting before hand the vertue and tinctures of the ſeveral ingredients which are to be received into the liquor, which is that which commonly Chymiſts do commonly call their *Menſtruum*: Now of whatſoever quality or nature that *Menſtruum* be, it cannot take upon on it ſelf, nor be impregnated with the Tincture or Eſſence of any Vegetable, Animal, or Mineral whatſoever, but according to its own way or capacity of receiving, which cannot be otherwiſe diſpoſed then by the weight of Nature, which is nothing elſe but the capacity, and ſufficient quantity of the moſt ſubtle matter of the extracted body, whereof the *Menſtruum* is impregnated: and when it is thus filled and ſatiated within, either cold or warm, all the power of Art cannot make it to take up more; becauſe as we have ſaid, he is loaden according to the weight of Nature, which cannot be tranſgreſſed, unleſs with a deſign to loſe all, or fruſtrate the operation: for,

Eſt modus in rebus, ſunt certi denique fines:
Quos ultra citraque nequit conſiſtere rectum.

For example. Take ℥ iv. of ordinary Salt, diſſolve them in ℥ viij. of common Water warm, and you ſhall ſee the Water to take up but ℥ iij. of the ſalt, and leave behind the fourth, and though you never boyl or agitate ſo much the water with the ſalt, yet it ſhal not be capable to receive more; becauſe if it appears diſſolved in the heat, it ſinks aftewards neverthеleſs to the bottom, & coagulates when the water is grown cold. But to prove more evidently that the water is naturally and ſufficiently loaded; take a competent quantity of this water ſo impregnated with ſalt, that an Egge may ſwim in it, whereby you may immediately know, whether the water is loaded according to the weight of Nature; for if it hath as much as it can be capable to receive, the Egge will ſwim above the water; but if it be not ſufficiently loaden or impregnated, the Egge will immediately ſink to the bottom; becauſe the water is not ſufficiently filled with the diſſolved body of the ſalt to hinder the ſinking of that of the Egge. Another proof and experiment thereof, is made in the boyling of Hydromel or Mead; for, when the water is not yet ſufficiently loaded with the ſmall bodies of Honey, the Egge will never ſwim above the water; but to the contrary, will immediately ſink to the bottom: but, when by reiterated experiments, you are come to bring the Egge to ſwim above water, it is then a true ſign of the ſufficient boyling of the Mead, and that the water is as much impregnated with Honey as it can bear, to have a pleaſant and vinous drink thereof, after due fermentation; whereas if it be more loaded, the drink will prove clammy and cleaving to the lips, by reaſon of the over-abundance of Honey; and if it be not enough, then it is defective, and wants its ſufficiency of the body of Honey, to give it the taſte and ſtrength it ought to have; becauſe the ſpirits of Honey, which cauſes its goodneſs, are in too ſmall a quantity to cauſe due fermentation. We ſay the ſame thing of ſpirit of Wine, *Aqua-vitæ* plain and diſtilled Vinegar, corroſive ſpirits of Salt, Nitre, Vitriol, or Copparis, all Strong-waters generally, Liquors or Menſtrua's, which are capable to extract or diſſolve any Body, Animal, Vegetable, or Mineral. For example, put Coral groſly powdered in a Matraſs, and pour upon diſtilled Vinegar, by degrees, to the height of three or four fingers, you ſhall immediately perceive its action, and hear a certain noiſe in its ebullition, which cauſes the diſſolution of the body of Coral; but when this ebullition or noiſe is ceaſed, filtrate the liquor which ſwims above, and put it upon new Coral and Powder, and you ſhall perceive no more action or noiſe; which evidently proves that liquor to be ſatiated with the body received, and uncapable to admit any more; Take alſo water, *Aqua-vitæ*, or ſpirit of Wine, and put upon Saffron, until it be exhaled to a very high colour; then take afterwards new Saffron and pour this tincture upon it, and you ſhall perceive that this will extract no more, and that your Saffron will remain of the ſame colour as when you did put it in at firſt.

It happens ſo to all Vegetable Bodies entring in the preparation of compounded Syrups, as Herbs, Flowers, Fruits, Seeds and Roots. All theſe bodies have a ſalt in themſelves, which though of a different nature, doth notwithſtanding load or impregnate of its ſubſtance more or leſs Clammy, the *Menſtruum*, which the Apothecary doth uſe, according to the Diſpenſatory from whence he hath his direction, proportionally to the weight of Nature; and when this *Menſtruum* is once impregnated, with the vertue or eſſence of any of thoſe things, to the concurrence and proportion of the weight of Nature, it is impoſſible it ſhould attract to it ſelf the tincture or vertue of other bodies added to it afterwards, without ſome deperdition and loſs: for the nature of theſe bodies will be either fixt or volatile; if fixt, the *Menſtruum* is already loaded with ſomething of like nature, and ſo this body ſhall never communicate its vertue to the decoction of the Syrup already ſufficiently loaded: but, if the vertue of this body be volatile, it will needleſly evaporate during the ebullition of the ſuperfluous liquor in the concocting of the Syrup.

All what we have ſaid here above, may ſufficiently ſhow the neceſſity of delivering our promiſed notes upon the compounded Syrups, and the examples of the dividing the matters which enter into the compoſition of theſe Syrups, to extract their eſſence and vertue, according to the ſeveral nature which is in them, whether it reſides in the fixed part, or be found in the volatile.

We ſhall then make uſe of the example of ſix kinds of Syrups, having ſix ſeveral uſes, and conſequently compounded of different ſubſtances, and extracted with different *Menſtruums*, to demonſtrate the better the truth of all the poſſible means. Theſe ſyrups; are firſt, a ſtomachal one, which is the compounded ſyrup of Wormwood. Secondly an aperitive ſyrup, which is the acetous, or compounded ſyrup of Vinegar. The third is, an hyſterical ſyrup, or good for the Mother, which is the compounded ſyrup of Mugwort. The fourth, a cholagogick and hepatical ſyrup, which is the compounded ſyrup of Endive or Chicory, with Rhubarb. The fifth is, a thoracical or pectoral ſyrup, dedicated to the diſeaſes of the Breaſt, which is that of Hyſop. The ſixth is, a Purgative and Phlegmagogical ſyrup, which is the ſyrup of Carthamy, or baſtard Saffron. We ſhall firſt deliver them according to the ancient diſpenſations, and then ſhall make our notes thereupon of their imperfection: after which ſhall follow our preſcription for preparing after the modern way, *i.e.* Chymically and without defects.

The old way of preparing the compounded Syrup of Wormwood.

℞ *lib.* ß. of *Abſynthium Ponticum*, or *Romanum*, ℥ ij. of red Roſes, ʒ ij. of Indian Nard. Put it in maceration reduced to a groſs Powder, in an earthen Veſſel glazed, the ſpace of 24 hours, with good old Claret Wine, and well depurated Juice of Quinces, *ana lib.* iij. ℥ iv. After this, let all boyl and percolate; and thereof with *lib.* ij. of ſugar, make a ſyrup according to Art.

This ſyrup is none of the leaſt in an Apothecaries ſhop, provided it be well and duly prepared: for it is compounded of ſuch things as may produce thoſe effects attributed unto it by Authors, provided that by a groſs and unpardonable ignorance, that which doth conſtitute its vertue be not loſt: ſuch as are the ſpirit of the Claret Wine, the volatile, odoriferous, and ſubtile eſſence of the Wormwood, Roſes, and Indian Nard. But we have already ſufficiently ſaid before, the reaſons why this common Preparation was erroneous, when we diſcourſed concerning plain ſyrups; wherefore we will content our ſelves, only to ſay, that no body can boyl to a conſiſtency the infuſion of this ſyrnp with *lib.* ij. of Sugar, unleſs you evapotate firſt by coction and ebullution *lib.* 5. & more of the ſuperfluous liquor, which can-

not

not be done without the loſs of the ſpirit of Wine, and the volatile Sulphurous Salt of the ingredients, and ſo there ſhall remain only the ſharpneſs of the Juyce of Quinces, and the groſs and material extract of the reſt. We muſt then preſcribe another preparation of this remedy, and the manner of well operating without any loſs of the beſt ſubſtance.

How the compounded Syrup of Wormwood muſt rightly be prepared.

℞ ℥ vi. of new Wormwood, ℥ iij. of Mint, ℥ j. Galanga, ℥ ij. *Calamus aromat.* ℥ i. ß. red-Roſes, and ℥ ß. Indian Nard, which ſhred very ſmall, and put in a Glaſs Cucurbite with ℔ iiij. of good Claret Wine; put all in *B. M.* with the requiſite pre-cautions to the work and diſtillation, and after 24. hours infuſion, extract ℥ xviij. of ſpirituous and odoriferous Water, which put in a double Veſſel, or blind Head, and add to it ℥ ij. ß. more of the tops of Wormwood, ʒ ij. of Cloves, and ℥ ß. of Nutmeg, and ʒ ij. of ſelect Maſtick, all reduced to ſubtle Powder, and after two dayes infuſion in a vaporous Bath, ſtrain it in the cold, and filtrate the liquor, which you ſhall keep in a Vial, until you have boyled the remainder of your diſtillation and expreſſion in a glazed Pot of Earth, to the conſumption of half, which clarifie, and boyl afterwards to the conſiſtency of Lozenges, to diſſolve again in Syrup, with the eſſenſified Water of the ſtomachal vertue of Wormwood and Aromatical ſubſtances. If you will render it more active yet, and ready to anſwer your indications, add to it ſpirit of Vitriol, or of Salt, until it hath acquired a pleaſant ſharpneſs, much better then that which might have been left from the juyce of Quinces, after ſo long unneceſſary an ebullition.

The ancient way of preparing your acetous Syrup, or the compounded Syrup of Vinegar.

℞ Roots of Fennel, Smallage and Endive, or Chicory, *ana* ℥ iij. of the Seeds of the ſame *ana* ℥ j. except Endive ℥ ß. boyl all, ſhred and reduce it to a groſs powder in *lib.* x. of Spring-water with a ſlow fire, to the conſumption of one half, then in an Earthen Veſſel glazed; reduce it to a Syrup with ℔ iij. of Sugar, and ℔ ij. of very ſtrong Vinegar: We have the ſame reaſons to take and note the Errors, whereof was ſpoken above: For, who cannot (I beſeech you) perceive the groſs and plain abſurdities herein obvious, to boil Seeds and Roots, compounded of Volatile and ſubtile parts, with a ſlow fire, and *lib.* x. of water and moreover, to joyn two pound of Vinegar, to ℔ v. of Liquor, to deſtroy the moſt penetrative and active part of it, and upon whom depends all the inciſive and aperitive vertue of this Syrup. Let us not grow tedious nevertheleſs, in repeating ſo often the ſame leſſon: but ſhow the way and means how to do better, ſince we have ſufficiently explicated this matter here above in our preceding Notes upon the plain acetous Syrup.

The Chymical Preparation of the compounded acetous Syrup.

℞ Roots of Smallage, Chicory or Endive *ana* ℥ iij. Seeds of Anis, Fennel and Smallage *ana* ʒ j. Endive ʒ ß. beat the Seeds groſly, and ſhred the Roots very ſmall, then put in a Glaſs Cucurbite, and pour upon it *lib.* ij. of diſtilled Vinegar well dephlegmated; diſtil it all in *B. M.* until you have drawn off all the Vinegar, and the ſubſtances be dry in the bottom; keep in a Vial the diſtilled Vinegar, which is impregnated with the Volatile Salt of the Roots and Seeds, which communicate unto it its chief Vertue of opening obſtructions: draw off the remainder from the Cucurbite, and make it boyl in ℔ ij. of common water, until a third part remains, which clarifie, and boyl to the conſiſtency of Lozenges, with *lib.* iij. refined Sugar: to diſſolve afterwards in the luke-warm heat of the Bath, to a conſiſtency of Syrup, with the Vinegar you had before drawn off by diſtillation. This Syrup is excellent for clenſing of the Ventricle in pituitous bodies, which for the moſt part is ſtuft with ſlimy and mucilaginous ſubſtances, which ſpread over the internal tunicles, and hinder the digeſtion of meats and ſtomack, and are the occaſional cauſes of baſtard Feavers: it is alſo very good to open obſtructions of the Reins or Kidneys, Liver, and Spleen, by reaſon of the ſubtility of the Tartar volatilized in the diſtilled Vinegar, aſſiſted with the ſubtile and penetrating vertue of the Volatile ſalt of the ſeeds and roots.

The ancient way of preparing the Syrup of Mugwort.

THE Preparation of this Syrup is ordinarily preſcribed as a Maſter-piece for young Apothecaries to make trial of their skill: I believe nevertheleſs, more to try their skill and abilities in the knowledge of Plants, than preparing the Syrup with a true preſervation of the vertue of its ingredients, which are indeed capable of producing noble effects, ſince it is compoſed of Herbs, Roots, ſeeds, and

Aromatical ſubſtances, all concurring to the ſame end; and all ſpecifical remedies of the Mother, and fit to remove the ſuppreſſion of Moneths, and cleanſe, and as it were ſweep the Womb of all the filth wherewith it might be infected, and free it from the pains which winds will ſometimes cauſe in this part, which for the moſt part irritate it even to Convulſions, Suffocations, and Lypothymies.

But all this ſhall never be performed, unleſs by the help of Chymiſtry, all the ſubtile and penetrative vertue, which enters into this ſyrup, be duly preſerved.

The Deſcription of the ſaid Syrup.

℞ M ij. Mugwort, after it is over-grown and yet in flower; Penyroyal, Calamint, Origan, Balm-Mint, Dittany of Creet, Perſicary, Savin, Marjerom, Chamædry, St. Johns-wort, Chamæpytis or Ground-Pine, Feverfew with its flower, ſmall Centaury, Rhue, Betony, Bugloſs, *ana* M. j. Fennel roots, Knee-holm, Parſley, as *Aſparagus*, Smallage, Pimpernel, Woodbind, *Cyperus Aromaticus*, Madder, Iris, and Pæony *ana* ℥ j. Juniper-berries, ſeeds of Lovage-Parſley, Smallage, Anis, Hith, wild Spikenard, Sneeſing-wort, or Pepper-wort, Valerian, *Coſtus amarus*, *Carpo Balſamum*, Cubebs or Cardamom, aromatical *Caſſia Lignea*, and *Calamus*, of all *ana* ℥ ß. ſhred the Herbs and recent Roots, & reduce to groſs Powder all the dry ſubſtances, & infuſe and macerate 24 hours in pure water, then boyl and evaporate to the conſumption of the whole half, and removing the Veſſel from the fire, when the decoction is grown luke-warm, rub and handle the ſubſtances with your hands; and having made an exact ſtraining of all, boyl it to a conſiſtency of ſyrup, with *lib.* iiij. of ſugar. *Nota*, that the preſcription runs iteratively, that before the decoction be boyled with ſugar, it may very exactly and cleanly be ſtrained and ſtrained again, or that otherwiſe the ſyrup will gather a Mother, and eaſily loſe its clearneſs and colour; becauſe they pretend not to clarifie it, leſt the white of Eggs ſhould attract all the vertue of the decoction to themſelves: and moreover, do ordain to put in the aromatical ſubſtances only towards the end of the ebullition, that the vertue of theſe volatile ſubſtances ſhould not deperiſh by too long a coction. By which it appears, that theſe men only fail in their operations, for want of having been initiated in the Myſteries of Chymiſtry, whereby they ſhould have been taught to reaſon with more judgement, and work with more circumſpection. But let us come to the examination of this Preparation, and neceſſary notes for the inſtruction of the Chymical Apothecary; and only with three we ſhall ſufficiently give to underſtand the impertinency of their proceeding. And firſt of all, To what conduces, I beſeech you, that friction, and handling of the ſpecies, ſince they muſt be preſſed, to extract by this violence all the Liquor whereof they are imbibed and impregnated? To what purpoſe again this duplicated and triplicated colature? Since it ſhall never be able to purifie the decoction, and that it is abſolutely neceſſary to clarifie it with whites of Eggs, to prepare therewith a ſyrup, which may be pleaſant to the ſight and taſte. The ſecond error is, that they will have the aromatical ſubſtances to be put in only towards the latter end of the decoction; leſt, ſay they, their vertue which doth conſiſt in very ſubtile parts ſhould vapour away; not conſidering, that although the decoction might have received ſome vertue from the aromatical ſubſtances, no ebullition of them being previous, yet this vertue muſt vaniſh away, when this ſame decoction ſhall be boyled with Sugar, and ſo their precaution is both injudicious and ignorant: But as for the third, is it, that nothing elſe but the aromatical ſubſtances are to be heeded in the preparation of this ſyrup? Since all the Plants, all the Fruits, all the roots and all the ſeeds which enter into its compoſition are aromatical and odoriferous, and conſequently filled with a ſalt ſpirit, and ſulphur very ſubtile; which is no leſs to be preſerved than the vertue of the ſaid aromatical ſubſtances, ſince theſe principles only give efficacy and power to the ſyrup, to appeaſe, as they pretend, all the irritations and exorbitancies of the Mother. It is not neceſſary, we ſhould deliver a particular method of preparing this ſyrup according to Chymical directions, ſince we have enough taught and repeated the manner of doing it, in the others which we have before deſcribed, and chiefly, where we ſpoke of the compounded acetous ſyrup: Thoſe that ſhall prepare this ſyrup, with thoſe precautions and Chymical method which we have before inſinuated, may boaſt they have made a Maſter-piece of Pharmacie: Since it doth not ſuffice to know the Ingredients, and make thereof a pompous ſhow; to neglect afterwards the preſerving of the vertue of thoſe things which enter into its compoſition, whereof for the moſt part, a great ſhow is made before the Maſter Apothecaries.

The vulgar preparation of the Syrup of Chicory with Rhubarb.

PHyſitians do make uſe of this Syrup for a very ſolid reaſon, ſince it hath its ground and foundation in the nature of the thing, and the experiency of its vertues: for, nothing comes in the compoſition of this ſyrup, which may not very well ſecond their good intentions, and produce the good effects by them wiſhed for and deſired; provided it be made with the depurated juyce of the Plants which do compoſe it; which by their bitter taſte give a ſufficient teſtimony of the eſſential Nitro-tartarous Salt abounding in them, which is both aperitive and diuretick; moreover, the aperitive Roots poſſeſs in themſelves a Salt which is analogous to that of Plants; but, that which doth conſtitute its chief vertue is the Rhubarb, which is the root of one of the kinds of *Lapathum*, containing in it ſelf a volatile, ſubtile and very efficacious Salt; a Balſamick and Conſervative Sulphur of the faculties of the Stomack: which is proved by its taſte and tingent colour, which not only communicates it ſelf to Excrements and Urin when well conditionated; but even carries the penetration of its tincture to the Eys and the Nails. It would then be a very great damage to loſe the vertues of this wonderful Root, or to neglect directions, how to extract them right, and preſerve them carefully. This Syrup is uſed againſt Obſtructions, Jaundiſe, Splenetical Diſeaſes, Chachexy and impurities in the Entrails, debility of the Ventricle, Epilepſie or Fallingſickneſs in general; but principally, againſt that of Children, and finally it is imployed, to expel by Stools and Urins, all what can be vitiated in us; and all this is true enough, becauſe this Syrup muſt be filled with the eſſential ſalt of Plants, and the volatile ſalt of Roots accompanied with the Balſamick ſulphur of Rhubarb, which do correct all the defects of the Spleen and ſtomack, the two parts which cauſe all the diſorders which this Syrup can appeaſe and reſettle as is fitting.

The vulgar manner of this Proceſs is then ſuch.

℞ domeſtical and wild Encive, *ana* M. ij. *ß*. Chicory and Dendelion *ana* M. ij. Sow-thiſtle, Hepatick Lettice, Fumitory and Hops, *ana* M. j. Barley whole ℥ ij. of each kind of the Capillaries *ana* ℥ ij. ʒ ij. *Alkakengi*, Liquoriſh, Ceterach, Doddar *ana* ℥ vj. Fennel roots, Smalage, Aſparagus *ana* ℥ ij. ſhred the herbs and roots, and make them boyl ℔ xxx. water, to the conſumption of one half, then boyl this decoction to a Syrup, with *lib.* x. clarified Sugar, and in boyling add in a knot of clean linnen, ℥ vij. *ß*. of excellent Rhubarb ſmall ſhred, and ʒ ij. of Indian Nard; from time to time you muſt preſs the knot, and when the Syrup ſhall be boyled to a ſufficient conſiſtency, and put up in its Pot, hang the ſame knot therein, with your Rhubarb and Spike, the better to entertain its vertue.

This is the common way of making this Syrup: to which vulgar

Apothecaries have thought fit to joyn ſome other Obſervations to make it the better,which nevertheleſs, do not much ſurpaſs the other: for, though they imagine in them to have ſomewhat better mended the matter, they go nevertheleſs to work but blindly, and grope without being able to find out the true way, becauſe they are not guided by the light of Chymiſtry. They ſay then, that the Barley muſt be macerated 24 hours with the Roots and dry Subſtances of this Compoſition, in ſuch a quantity of water as is required, and that all the reſt may be together boiled to the conſumption of the one half. That the decoction muſt afterwards be percolated, and a part of it taken, wherein for 12 hours together,at leaſt, muſt be infuſed ℥ vij.ß. of Spikenard and Rhubarb, to extract the tincture and vertue thereof; after which, they muſt boil a little, then ſoftly be expreſſed, and that this tincture muſt not be joyned with the remainder, but when the other part of the decoction ſhall be boiled to a perfect conſiſtency of Syrup, and to put there alſo the Rhubarb and Indian Nard in a knot of cloth, that they may communicate their vertue to the remainder of the ſyrup; becauſe otherwiſe it would not be perceived, that the ſuſpenſion of this ſame knot in the Syrup might contribute to its vertue, and when all ſhall be put together, then muſt the Syrup be thickned by degrees, until it comes to a true and requiſite conſiſtency. It ſeems by this,that great care is taken in reforming the preparation of this Syrup:But it is very coorſely:for,Do they not judge,that this decoction is charged with the body of the Roots, and that of the Herbs, and ſo can take no more? neither extract well the Rhubarb, which is the baſis and foundation of the vertue of this remedy? But yet, had they preſcribed before to clarifie this decoction, to deveſt her from the groſs body, which the collature cannot take away; they ſhould have ſhown ſome ſpark of judgment, which yet would be defective in this, that it might indeed thus extract better; but would not preſerve the volatile part of the Rhubarb, nor the odour of the Spikenard, becauſe before you can make a true Syrup, *lib.* x. or *lib.* xi. of water muſt firſt be evaporated away: which cannot be done but by the means we ſhall now preſcribe.

The right way of preparing Chymically the compounded Syrup of Chicory with Rhubarb.

℞ enough of all juicy Plants which enter into the compoſition of this Syrup, to make ℔.viij. of the juyce thereof,ſhred and bruiſe them in a ſtone Mortar, expreſs the juyce, and put it in *B. M.* in a Glaſs

Cucurbit covered with its Head-Limbeck to make a due depuration thereof; keep the water extracted, run the juyce through a Flannel, and put again in *B. M.* and add the Roots mundified and the Capillaries; then draw of ℔ iv. of water, which joyn to the firſt, then put the quantity of Rhubarb and Indian Nard, which you deſtinate to your Syrup: I do pre-ſuppoſe it to be ʒ ß. upon each ounce of ſyrup, which is one ounce to each pound, in a Matraſs, and pour upon of the water extracted from the juyces three fingers high above the matter, digeſt it during 12 days in a vaporous Bath to make the extraction thereof; percolate and ſqueeze ſoftly this firſt expreſſion, put the Rhubarb again in the Matraſs with new water, and ſo continue till three re-iterated times, and you ſhall have all the tincture of the Rhubarb, which you ſhall by ſettlement purifie in *B. M.* by reaſon of the expreſſion which ever tranſmits ſome groſs body and material. This done, decoct the reſt of your juyce, after you have ſtrained and clarified it with the Sugar, and reduce it to a conſiſtency of Lozenges, which with your tincture of Rhubarb diſſolve in a true ſyrup poſſeſſed with all the intended vertues, and which without loſs of its faculties ſhall preſerve it long, by reaſon of the great ſtore of the Salts of Plants, and the true Balſamick Sulphur of Rhubarb. *Nota*, that ℥ ß. of this Syrup is more efficacious then a whole ounce of that of the vulgar preparation.

The manner of Preparing the compounded Syrup of Hyſop according to the method of the Ancients.

℞ Hyſop not very much dryed, Roots of Smallage, Fennel, Parſley, Liquoriſh *ana* ℥ x. French-Barley ℥ ß. Gum-Dragan, Seeds of Mallows and Quinces, *ana* ʒ iij. Capillaries ʒ vi. Jujubes and *Sebeſtens ana* N. xxx. Raiſins of the Sun ſtoned ℥ j. ß. Figs and Dates ſomething fat, *ana* N. x. decoct all in ℔ viij. water until half be conſumed away; reduce the reſt in a conſiſtency of ſyrup after you have expreſſed it with ℔ ij. Sugar refined.

If in the fore-going deſcriptions of ſyrups we have noted ſome things improper and ill digeſted; this diſcovers yet much more the ignorance and ſupinity of vulgar Pharmacy. For, if we take the pains to examine throughly the ingredients wherewith it is compounded, we find nothing in it but an *abyſſus* of miſtakes and *Chaos* of Errors; and what I do yet find worſt, is, that Chymiſtry here is at a *non-plus*, not knowing where to have her recourſe and repair the defects of this practice : For, the Roots and Herbs yield already from themſelves a decoction ſufficiently courſe ; the Fruits render it clammy and viſcous, but the Gum and Seeds ſhall render it altogether muſcilaginous ; So, that it will ever be impoſſible to take a Syrup therewith ; and, if any doth advance himſelf ſo much, as to boaſt that he may effect it——

——--Talem vix reperit unum,
Millibus è multis hominum conſultus Apollo.

For, if he pretends to make his decoction ſuperficially, without well concocting the Roots, Fruits, Seeds, and Gums, he ſhall fruſtrate the intention of the Authors and Compilers of this Preſcription, and deprive the Syrup of the pretended vertue which is attributed unto it ; and, if moreover, he decocts it as it muſt and ought to be, he ſhall loſe the volatile part of the Roots, and chiefly of the Hyſop and Capillaries ; but, if he doth clarifie his decoction, the white of Eggs ſhall keep the Gums and Muſcilagineous Subſtances. I know, moreover, that the vulgar of Apothecaries who prepare this Syrup, do pretend to have quitted themſelves of their duty, when they have boiled the muſcilagineous Subſtances in the decoction in a knot, which they afterwards draw back again without expreſſion, and ſo is their decoction deveſted from the required vertue, moreover, what more ridiculous thing can there be, then to ſubſtitute the refined Sugar, or in caſe to common Sugar ; for, I can ſatisfie my ſelf with no reaſon I can imagine, unleſs it be to raiſe the price of the Syrup, and to abuſe the vulgar and ignorant people. As then, this ſyrup cannot poſſibly be well made according to this preſcription, no more can it have the vertues which are attributed unto it, *viz.* to contribute to the cure of cold diſeaſes in the Breſt ; where it is required to cleanſe and attenuate the craſs and clammy matter which doth obſeſs it, take away Obſtructions, alleviate Hypochondriacal pains, and to be ſoveraign againſt the gravel. Now there is no body, that is ſo little acquainted with the Ingredients of this ſyrup, who ſeeth not it is a manifeſt abſurdity, to hope to open with viſcoſities and clammy glewing matters, which enter in the compoſition of this Syrup, to open Obſtructions, which they would much ſooner be capable to produce, then to remove. Therefore, whoſoever requires a good pectoral ſyrup, let him make it in the following manner.

Pectoral Syrup of Hyſop very ſingular.

℞ new Hyſop ℥ iv. Roots of Smallage, Fennel, Parſley, Liquoriſh *ana* ℥ j. ſhred and beat it groſly, and then put in a Glaſs Cucurbit, and pour upon *lib.* j. juyce of Hyſop: ℥ xij. Juice of Fennel, and *lib.* *ß.* Juice of Ground-Ivy. Diſtil all in *B. M.* until the grounds look almoſt dry. Infuſe again during the ſpace of a natural day in your water ℥ j. *ß.* freſh Hyſop and as much unprepared Squilla: ℥ j. Fennel Roots, as much of the tops of Ground-Ivy: ſtrain, expreſs, and filtrate this infuſion, and keep it by it ſelf. After this, boil the matter remaining after diſtillation and expreſſion in *lib.* iv. water to half conſumption; again, ſtrain and clarifie, then boil it, to a conſiſtency of Lozenges with *lib.* ij. *ß.* Sugar, which diſſolve in Syrup with the eſſenſified water of the Tincture and Salt of pectoral Plants. So ſhall you have a Syrup which will be of very great ſervice and uſe.

The vulgar way of Preparing the Syrup of Carthamy.

IT ſeemeth that both ancient and modern Phyſicians have pretended only to ſhew their great skill, both in the Theorical and Practical part of Phyſick, when they have heaped up great ſtore of needleſs Ingredients for the compoſition of Waters, Electuaries and Opiats; but chiefly, in the deſcriptions which they have left us of their Magiſterial Syrups. That of Carthamy or Baſtard Saffron, the examination whereof we come now to handle, affords us a ſufficient example thereof: For, I know not what Maſter-piece they pretend to have made, in mixing often one with another ſuch kinds of Drugs as are altogether different among themſelves, and contradictory for the moſt part to their purpoſes: the Error of this is only occaſioned by their ignorance in the different nature of Salts, and Spirits, and much more in the action and re-action of the one upon the other; as is daily ſeen in the laboratories of ſuch as apply themſelves to the Anatomy of natural Bodies, to learn by this way the manner of operating of Nature, and follow it cloſe in the things which Art doth preſcribe us: For, thoſe which have either made formerly, or make daily Receipts of a foot and half long, have in truth neither well conceived, nor well known by any experience, that, as Nature is but one and plain, ſo doth it but act plainly; and, ſo of neceſſity muſt the Phyſicians which are but her Agents and Apes, ſtudy to know the plain and ſpecifical vertue of natural products, to uſe them with the ſame plainneſs, that ſo they may become the true imitators of Nature.

Now have they not contented themſelves to make a needleſs rapſody: but, moreover, they have ordained the *modus faciendi* in ſo confuſed a manner, and ſo uncapable to extract the vertue of all theſe different ſpecies mixt together, that it even terrifies and moves to pity Artiſts, and as theſe ſyrups are uſed yet in many places, though cut off for the future from the practice of more expert and illuminated Phyſicians: we have thought neceſſary to relate it here, thereby to guide to the true method of well making theſe ſyrups, the Apothecaries not knowing and skilled in that myſteries of Chymiſtry.

But, before we go farther, let us explain the common way of operating.

℞ therefore this compounded purging ſyrup, of true Capillary, Hyſop, Thyme, Origan, Chamædrys or Germander, Chamæpitys or Ground Ivy, Ceterach or Stone-wort, Bugloſs *ana* M ß. Dodder, Alkekengi, Roots of Angelica, Liquoriſh, Fennel, Aſparagues, *ana* ℥ j. Polypody of the oak ℥ j. ß. rind of tamariſe ℥ ß. *Annis*, Fennel, Herb-William ſeeds, Dock ſeeds, *ana* ℥ j. Carthami ſeeds ſlightly beaten ℥ iv. Raiſins of the Sun ſtoned ℥ ij. Boil all theſe ſubſtances ſhred and groſly beaten together in ℔ vi. clear water, which reduce by boyling to a third, percolate this decoction, and put in warm to infuſion ℥ j. ß. Senne mundified, and ℥ ß. Agarick in Trochisks ʒ vi. ſelect Rhubarb, and ʒ j. Ginger: leave all to macerate during the ſpace of a whole night, and the next day make a ſtrong expreſſion, then ſtrain, and the ſtraining decoct to a ſyrup with *lib.* j. refined Sugar, and add of Violat and Roſat, both ſolutive ſyrups, and of acetous plain ſyrup *ana* ℥ ij. The uſe of this ſyrup, is by vulgar Apothecaries aſſigned to the cure of inveterate Feavers, Quotidians and Quartans, to open Obſtructions, which proceed from the clammineſs and craſneſs of that humour called *pituita*, and to drive by the Belly the noxious ſeroſities.

I ask now, whether it be poſſible, that this decoction loaded with the ſubſtance of the firſt matters of this ſyrup, and moreover reduced to a third, is capable to receive, much leſs to extract the vertue of Purgatives: and then, to what purpoſe, I beſeech you, the addition of ℥ ij. of each of theſe ſyrups preſcribed, ſince a quantity of Sugar may be ſubſtituted in the place, and in their ſtead alſo; infuſion of Violets may be added, and of Roſes, and ſomething of common Vinegar, or of diſtilled, as we ſhall ſay hereafter. But this is not all; but, beſides this, muſt be conſidered the moſt important loſs of volatile and ſulphureous Salts, Herbs, Roots, and Seeds, which fly away, and evaporate by decoction. Let us then ſay, how the buſineſs may be mended, and let the following Syrup, be a rule and model for all other purging compounded ſyrups.

The true Chymical Preparation of the Syrup of Carthamy.

℞ the true Capillary, Hyſop, Thyme, Origan, Germander, Ground-Ivy, Spleen-wort, Angelica root, Annis, Fennel, and Herb-William ſeeds, ſhred the Plants and Roots, and beat to Powder the ſeeds groſly; place all in a Cucurbit in *B.M.* with ℔ ij. water, and ℥ iv. juyce or infuſion of Roſes, as much of Violets, and ℥ j. diſtilled Vinegar, cover the Cucurbit with its Limbeck-head, and draw of ℔ ß. of a ſpirituous and odoriferous water, which preſerve. Add to this firſt decoction Bugloſs, Dadder, Grains of Alkakengi, Liquoriſh Roots, Fennel, Aſparagus, Polypody of the Oak, Tamarisk rind, Seed of Carthamy, and Raiſins mudified, and add ℔ iij. of water more, boil all to the conſumption of a third or half; percolate and expreſs the remainder of the Ingredients. Clarifie this decoction with whites of Eggs, and infuſe in a ſlow warmth in this clarified decoction the Senne, Agarick in Trochisks, Rhubarb and Ginger, during the ſpace of 24 hours, after which you ſhall let it boil a little together, and then percolate; keep the colature by it ſelf, and let it boil once more the Purgative Species in ℔ j. new common water, to extract all the remaining vertue; percolate and expreſs this laſt decoction, which joyn to the firſt extraction of your Purgatives, and clarifie and concoct to the conſiſtency of an Electuary with *lib.* ij. Sugar in Powder. After which, you ſhall bring your ſyrup to a due conſiſtency with the ſpirituous and aromatical water which you have drawn by diſtillation. In this manner ſhall you have a Purgative compounded ſyrup, very pleaſing, and full of the vertue of all its ingredients, and which for many years will keep without alteration; provided it be kept as all other ſyrups, in a moderate place, neither hot nor cold; becauſe from theſe two qualities, for the moſt part, proceeds the cauſe of fermentation, whereby they become ſharp and acid, or from gathering of mother and rankneſs, which doth corrupt and ſpoil them.

Thus much had we to ſay upon the ſubject of Plants; and theſe are the notes we thought neceſſary to obſerve, for ſuch as will make good diſtilled waters and ſyrups. What we have ſaid, is ſufficient to teach well, not only what is uſeful to theſe two Preparations: but may be alſo with great reaſon obſerved and made uſe of, to prepare all macerations, infuſions, decoctions, digeſtions and ebullitions, of whatſoever the Phyſicians preſcribe to Apothecaries for Apogems, Juleps, Potions, and other Preparations preſcribed for the good of the Patient: And I know, that after Apothecaries have known what uſeful ſubſtance may by the action of heat be evaporated, they will ſtudy to preſerve it the more, to advance in all things the good of their Neighbour, the diſcharge of their Conſcience, and the honour and credit of Pharmacy: and moreover, they will know, that they could not receive theſe lights from any where elſe, but the Precepts of Chymiſtry.

Now having thus given a general Idea of Integral Vegetables, and their conſtitutive parts, of what is fixt in them, and what volatile; and having given the neceſſary Notes, whereby a Chymical Artiſt may loſe nothing of what he ought to preſerve: it is time to come to the part which Nature and Art do furniſh us with, in this ample family, and that we give a Section to each of the 14 ſubalternate Species, which are extracted from the principal Vegetable kind: that the example we ſhall give of Chymical Operations, which muſt be performed upon the ſame ſpecies of that ſubalternate gender, may be as a guide and beacon, whereby the Artiſt may be directed to operate upon all other ſpecies that are of a like nature.

Theſe ſubalternate kinds, as already we have ſaid, are Roots, Leaves, Flowers, Fruits, Seeds, Rinds, Woods, Grains or Bays, Juyces, Oils, diſtilled Sap, Roſins, Gum-Roſins, and other Gums. We will afford a Section to each of theſe kinds in particular, that if theſe kinds, though ſubalternate of themſelves, have yet ſome other ſubordinated to them, we may nevertheleſs ſubdivide them, to give by this means, ſo much the more light to the Artiſt, becauſe there is often a variety and difference found between the parts of the ſame kind, which by conſequence require a different Operation. We will begin by the Roots.

Sect. I.

Of Roots.

Roots are the lower parts of Vegetables; and as it were, the ſhop and place of their firſt digeſtion: Now the digeſtion is, but the volatilization, or ſpiritualization of an aliment which in ſome kind was fixt: It ſeems then, that it was not without ſome ground of reaſon, that ſome have affirmed, that Roots were more fixt then any other part of the Plant, becauſe they are nouriſhed with a leſs elaborate nouriſhment then the reſt. This indeed ſeems true, if you have reſpect to ſome peculiar kind of Roots, but not generally to all: for, ſome poſſeſs the vertue of the whole Plant, ſo, that theſe are ſome Plants whereof the ſole Root is of uſe for Phyſical Preparations, becauſe ſearchers of Nature have found by experience, that the Salt, Sulphur and Mercury of theſe Plants had its principal heat in the Root, as their taſte and odour may witneſs. And as ſome Roots are wooddy, nervous and knotty; ſo, there are others that are thin, ſoft, and ſpongious; ſome are mucilaginous and full of jelly, as others are lacteous and full of marrow: ſome are bitter, ſome ſweet, ſome ſharp and pleaſant to the taſte; as to the contrary, others ſharp, biting, and even corroſive; finally, ſome are of a pleaſant ſmell, others very unpleaſant, and even offending the Brain and Breſt, whereas the firſt do recreate and ſtrengthen it.

The end of our ſpecificating all the differences, is only to give the better to the workman to underſtand, that he muſt not uſe the ſame way of Operation upon all Roots, before he hath maturely and judiciouſly examined of what parts they are compoſed, which is fixt, and which volatile, that after he ſhall have well conceived their nature, by the help of the external ſenſes, he may conclude upon this knowledge, which way he may proceed in extracting their vertue: And, as we come to examine the particulars of Chymical Operations made upon Vegetables and their parts, we will follow with examples of the manner of working according to the diverſity of Roots.

EXAMPLE. I.

Of the Preparation of Odoriferous Roots, which abound in Spirit and Volatile Salt.

WE will take for our firſt example of theſe Roots, that of Angelica, brought unto us from foraign parts, which is dry: For, as there is much vertue in this Root, and that it is one of the beſt Alexiteries: we have choſen it for a rule, upon which may be prepared the Roots of *Calamus Aromaticus*, Carlin-thiſtle, Lagwort, and Valerian, Pellitory of Spain, and others of the ſame nature, or in ſome way approaching, either by the ſmell or the taſte.

℞ then ℔ vi. of Bohemian Angelica Root, well-conditioned, *i. e.* neither too Dry nor Worm-eaten; ſhred it, and reduce to groſs Powder, which you ſhall put to digeſt by ſlow heat, in a double Glaſs Veſſel or Blind-head, with ℔ xij. of diſtilled Rain-water, and as much white Wine, during the ſpace of four natural days: After which, put all in a Still-body, and give it fire by degrees, until the Spirits begin to aſcend, and to condenſe and drop: then continue the fire in a well regulated equality, until you have extracted all the ſpirituous water; which will appear when that which comes off, ſhall have no more of taſte or odour left.

They that ſhall deſire to ſeparate the Spirit from the Water, muſt make the rectification of it in *B. M.* in a ſlow heat; and ſo ſhall they have a very ſubtile Spirit impregnated with the volatile Salt of Angelica Root, which is, of a very rare vertue in all Peſtilential diſeaſes and fits of the Mother. This Spirit is Diaphoretical and Alexiterial. The *doſis* is from ℈ *ß.* to ʒ j. in Wine, Broth, or even in its own Water.

The firſt Spirit being aſcended, encreaſe the fire, and extract the ſpirituous water, which ſhall follow until it comes out without taſte or ſmell; throw away the remainder, becauſe 'tis unprofitable: and preſerve this water to mix ſome of its Spirit with it, or diſſolve the extract of the Root from whence it hath been extracted. The *doſis* is from ℥ *ß.* to ℥ iv.

Moſt commonly there ſwims over the firſt diſtillation made *per veſicam*, an Ætherial Oil which muſt be ſeparated by the Flannel, or Funnel, and carefully preſerved; for it is a very noble Eſſence, to make thereof a potable and diſſoluble Balſom in Liquors, or a Preſervative Balſom in time of Plague. But, becauſe it often happens, that this Oil ſinks in the bottom of the Veſſel which hath received the water, becauſe the violence of the ebullition hath cauſed it to take along with it ſelf a portion of the fixt Salt of the Root; it muſt alſo be ſeparated with care, for it will not be inferiour in vertue to that which ſwims above, though it be nevertheleſs ſomething leſs ſubtile, and of leſs activity.

But let us return to examine that which did remain in the Veſſel after diſtillation, containing in it ſelf the fixed Root of the Root and a portion of its Sulphur, which never parts from it, by reaſon of the ſtrict union and tye they have together; this truth is juſtified by the colour of the remaining liquor and its taſte: which would argue a a great imprudence, and defect of knowledge and judgment in the Artiſt, if by his negligency and ignorance he ſhould ſuffer a deperdition of that ſubſtance, which nature and his own ſenſes make not only appear by the outward judgment, but is alſo really good in its ſelf. Therefore muſt the Chymical Apothecary acknowledge, that this vertue cannot be concentrated but in that which he calls an Extract, which is to be made after the following method.

Expreſs and ſtrain the whole, then clarifie with whites of Eggs, and let run through the Flannel or the Hypocras Bagge, and evaporate this liquor by a very gentle heat to the conſiſtency of an extract, which may be called between the conſiſtency of a maſs of Pills, and a liquid Electuary, that it may be given either in *Bolus* or Pills, when the Phyſician ſhall preſcribe; or, that it may be ſooner diſſolved in ſome appropriated liquor, according to the intention for which it is uſed. Now before we determine the *Doſis* of this Extract, we muſt ſay, by the way, that all Extracts which are made in this manner, are friendly to the Stomach, and do gently looſen the Belly, without interrupting the œconomy of digeſtion, and making any ſuperfluous or hurtful colliquation. And let this ſerve as a general Note for all the extracts which are made out of ſulphurous and volatile Vegetables, after the Spirit, Oil, and Water is drawn from them. The *doſis* of this extract, as of others of the ſame nature, is from ʒ *ß*. to ℥ *ß*. either alone or diſſolved, and mixt in its own water, or ſome other analogous liquor; and that to open gently the Patients Belly, without any fear of thoſe perturbations which do uſe to happen, by reaſon of the irritation and violence of ordinary Purgatives.

And as nothing is to be loſt of what poſſeſſes ſome vertue, you muſt dry the Cake remaining after expreſſion, and calcine it in an Earthen Veſſel, or Crucible not glazed, until the matter be reduced to gray Aſhes, whereof make a Lye with diſtilled Rain-water, which filtrate and evaporate till it be dry, to extract the Salt of the Roots; which afterwards put in a Crucible, and heat it glowing-red upon a fire of Coals without melting; then diſſolve it in the laſt water extracted; filtrate and evaporate it to a skim, and let it ſhoot into Cryſtals in the cold, then draw the Salt which ſhall come pure and clean: and ſo continue until there be no more Cryſtallization. You may mix a portion of this Salt in its own water, to render it leſs ſuſceptible of alteration, you may alſo put another part in the extract, and it will encreaſe the ſtomachal and cathartical vertue thereof. The reſt you ſhall keep, to the end, that if you deſire to re-unite all the fixt and volatile vertues of the Root of *Angelica* in one body to make a *Clyſſus* thereof (which is that ſubſtance properly which contains in it ſelf, as in a *compendium*, all the vertues of a Mixt, the parts whereof have been ſevered and depurated) you may joyn again the rectified Spirit and ætherial Oil, by the uniting *medium*, which is the fixt Salt, without which it is impoſſible to make any union of the Oil and Spirit, becauſe they are of a different nature, and will ſwim ever the one on the top of the other: but, when you have alkalized the ſubtle and rectified Spirit with the proper Alkali of the Plant, then ſhall you inſeparably joyn the Oil, whereof is produced a marvellous ſubſtance: but, as for the *Clyſſus*, there is no need of ſo much refining, mix only one part of fixt purified Salt, with 2 p. of diſtilled Oil, and 3 p. of the very ſubtile Spirit, and digeſt together in the vapour of a Bath in a circulatory Veſſel, until all the ſubſtance be indiſſolubly joyned and united together; which for the moſt part is performed within the time of a Philoſophical Month, which is 40 days, or that which we commonly call the ſpace of ſix weeks. This remedy thus prepared, may be given inſtead of the Spirit, Oil, Extract and Salt. Having all the Eſſential faculties of theſe four together. The *Doſis* is from vi. grains to ℈ j. in all diſeaſes wherein Phyſicians do make uſe of the body of *Angelica* root, whereof it hath been prepared.

How to prepare the Potable and Diſſoluble Oyl of the Root of Angelica.

Although this Preparation be not very full of myſtery, as it will ſeem to the Reader, yet is it not unworthy his conſideration, ſince it will ſerve to demonſtrate more and more the truth of what we have aſſerted heretofore, *viz.* that Salts are but cloſe Spirits, and poſſeſs in themſelves a hidden Sulphur, and, by conſequence, a median nature between aqueous and oleaginous liquors, which cannot coagulate, much leſs joyn together without the help of Salt, which renders the Oil diſſoluble and capable to be united to the water, and all other liquors of the like nature, which is not one of the leſs important ſecrets of Chymiſtry, though it ſeems in ſome manner deſpicable, by reaſon of its plainneſs: but, let no body deſpiſe this commendable plainneſs, ſince whoſoever ſhall follow her, may boldly boaſt, that he is the beſt follower of Nature, whoſe chief beauty and ſecret admirable operations are never found in the confuſion of things and imperfect mixtures, unleſs it be to contribute to generation of Monſters. Now, as our ſtudy muſt be, to render things pleaſant and eaſie, and, that thoſe that want theſe noble remedies, are not ſtill in places to come by Furnaces and Veſſels, to unite the fixt Salt to the Oil of its ſubject; and moreover, this Salt is for the moſt part unpleaſant, by reaſon of its lixivial and urinous taſte: I have thought more fitting, to take of Sugar well refined and reduced to very ſmall Powder; or, as they call it, Alkool, whereof you ſhall fill an Ivory or Silver guilt Box, upon which you ſhall drop by drop let fall ſome of the diſtilled Oil of *Angelica* Roots, or ſome other, until the Sugar be ſufficiently impregnated, and reduced to a conſiſtency capable to be contained in the Box, although it were turned upſide down. So ſhall you have an admirable Balſom, which by way of precaution, and for a Preſervative, you may uſe in the time of Peſtilence; yet, with this precaution, that it be ſo taken in a leſs *doſis*, than if you took it for a curative remedy. The *doſis* is from the bigneſs of a Pea to that of a ſmall Nut. In Wine in the morning faſting, if it be for a Preſervative; or in its own Spirit or Water for a curative remedy.

Let no body wonder, that Sugar ſhould cauſe Oil to mix well and diſſolve in water, for Sugar is a Vegetable Salt, whoſe nature it is to work, ſo being mixt of Sulphur and Mercury, whereby it is rendered perceptible of Oil, whoſe nature it alters nevertheleſs ſo much, that it eaſily diſſolves and unites it ſelf with water, by reaſon of the ſaline ſubſtance of the ſaid Sugar. Theſe Balſoms are properly ſuch as you find in modern Authors : under the name of *Elæo-ſaccharum*.

How the unctuous Balſom of the Oyl of Angelica Root may be prepared.

TO make this Balſom, chuſe an incorruptible ſubſtance, without either ſmell or colour, which might be capable to receive the Oil, and preſerve its odour and vertue. Thoſe that have addicted themſelves to this operation, have much laboured and took great pains, before they could meet with a ſubſtance deveſted of colour and ſmell, and that ſhould not turn to corruption in time. For ſome years, white Wax and Marrow, were two ſubjects uſed to this purpoſe; as alſo the fat or ſuet of Kid and of Pork, well prepared and waſhed : but this laſted very little, theſe ſubſtances becoming rank, of ill odour, and yellow. To make ſhort, Chymiſts have exerciſed their wit further, and refining this proceſs, made uſe of the Oil, which by expreſſion is extracted from the Nutmeg, to make therewith the body of their Balſoms; without loſing, nevertheleſs, the ſubtile æthereal and odoriferous vertue of the Nutmeg, which is thus performed.

℞ ℥ iv. of very pure Oil of Nutmeg, and free from any other mixture; put it in a Matraſs with a long Neck, or in a double Glaſs, or blind-Head, and pour upon it tartarized Spirit of Wine, to the height of four fingers, then put in *B. M.* and with a gentle heat extract and digeſt, and when the Spirit ſhall be ſufficiently impregnated with the tincture of the Oil; draw it off by inclination, and pour other, and reiterate until it takes no more of the tincture. Then put all what remains in a white Earthen diſh, and waſh with boiling water, until the whole maſs becomes white and inodorous, and this will ſerve to make the Body of all unctuous Balſoms, which contracts no ill quality, and will eaſily be impregnated, with the odour and vertue of odoriferous and aromatical Oils. But, becauſe the eye as well as the ſmell muſt be pleaſed, the green colour is imparted to the Balſoms of Plants, with the juyce of ſome inodoriferous Herb, wherein the Body of the Balſoms is put to boyl, which you intend to have thus coloured : The Balſoms of Oils of Roots and aromatical Subſtances are coloured with yellow Earth, when they come near that colour in their nature, and thoſe of Flowers, with a little of fine Gumlack, which the Painters are wont to make uſe of. Now as this body of Balſoms is dryed, by reaſon of the extraction of its ſubtile and unctuous Oyl, made by the help of tartarized Spirit of wine, there is no more to be done further, then to feed it again with a proportionate quantity of the Oil of *Angelica* Root, or ſome other aromatical Oil, to make the unctuous Balſom thereof, with whom the Noſtrils and Temple of the Head, as alſo the back of the hand doth uſe in time of contagious diſeaſes to be rub'd, to hinder ill ſmells and ſavours from invading the Brain, and to correct the malignity of thoſe peſtiferous and hurtful Spirits, which fill up the Air in ſuch dangerous times, or, when there is a neceſſity to converſe in places expoſed to nauſeous ſmells, or where ſick people uſe to lye. But, before we proced further, it will not be amiſs, to direct the Artiſt what he is to do with the extraction made by him, out of the Oil of Nutmeg with Spirit of Wine. This Spirit muſt he draw off again in *B. M.* to the conſiſtency of a Syrup or boiled Honey, and ſo ſhall he obtain the extract of Nutmeg impregnated with the beſt of its corporeal ſubſtance; and a Spirit poſſeſſed with its Oil Spirit, and volatile Salt; if you pleaſe, you may keep ſome part of its extraction; for this ſhall be as a *medium* between the Extract, and Spirit, which hath been drawn off it, and may be made uſe of to the ſame purpoſes, becauſe it poſſeſſes the ſame vertue and efficacy. The vertue of the Extract, Spirit and Tincture, refreſhes and delights the Stomack, Brain, and Womb, corrects the ill ſmell of the breath, diſſipates wind, helps digeſtion, ſtrengthens the *Embrio* in the Womb, is good againſt Swoundings and beating of the Heart, opens and diſſipates Obſtructions of the Spleen, ſtops Lasks and Vomiting. And as I am a witneſs of the vulnerary vertue of Nutmeg; I think my ſelf obliged for advancing publick good, to relate here, what I have ſeen done in *Germany*, in the perſon of a Captain of Horſe, filled all over the Body with wounds both of ſhot and Sword, and who nevertheleſs, had never felt any touch of Ague in all the time his wounds were about to be cured, not even when the ſuppuration was working. This will ſeem, without doubt, very ſtrange and Paradoxical: But, when I have told you, that this Gentleman did ever wear about him Nutmeg, and aſſoon as he felt himſelf hurt, did eat a whole one; your admiration will ceaſe, ſince the Balſamical vertue of Nutmeg, reſiding in its Oil and volatile Salt, being driven by the heat of the Stomack in all the parts of the Body, did correct the malignant and dangerous ſeroſity, which is the occaſional cauſe of pains, inflammations, and by conſequence, Feavers, and finally, Death in the greateſt part of thoſe which are hurt in ſome principal part of the body. Chirurgions then muſt not ſo lightly fear vulnerary Potions, neither to make uſe of this Aromat in Broths of their Patient, by reaſon of its too great pretended heat: to the contrary, the more expert and skilful they are, and guided by good judgment, they have their recourſe to the ſame, as to a very ſafe refuge, which will never fail them; but chiefly, if they uſe externally as well as internally, the tincture extracted after the manner by us related here above. Let it not be objected to me, that I bring a perſonal examaple; ſince the ſame hath happened to ſeveral of his friends, though they were of a different temper, as they ſpeak, and had been very ill and ſick in the cure of ſeveral other wounds, becauſe they made no uſe then of the ſaid Nutmeg.

I hope, this digreſſion will not have proved unpleaſant, ſince it is uſeful both to the general and private good; but, we will make appear, that Chymiſtry doth not content it ſelf with the colour of unctuous Balſoms, whereof we have made mention even now, ſince it hath found the ſecret to colour the body of Balſoms, with the Magiſtery of the ſame Plants wherewith the Balſom is to be made; and it is thus performed.

℞ Rhue or Marjoram, or any other balſamick and odoriferous Plant, as much as you will, when they are yet in the vigour of their green, boyl it in water ſufficiently impregnated with the Oil of Tartar, made *per deliquium*, or plain Tartar diſſolved; ſtrain the coction, and pour upon it diſſolution of Rock-Allom, made in diſtilled Rain-water, and the matter will precipitate it ſelf toward the bottom, in the form of a green Pap: Separate the ſwimming liquor by filtration, then waſh the filtrated matter with common water at firſt, and with the odoriferous diſtilled water of the Plant it ſelf towards the end, untill you have deprived it of all ſaline taſte, which it may have received from the Salt of Tartar and Allom: Evaporate afterwards with a gentle heat this Magiſtery, until it hath acquired the conſiſtency of a very thick Pap, with which you ſhall tinge the white and inodorous Body of the NutMegg, which you ſhall gently dry in the Air, to preſerve for the making of your Balſom; or, if you add to it preſently, the diſtilled Oil of the Plant, then will the Balſom be perfect, and keep its odour, and its colour as long as you can wiſh. But note, that you muſt not altogether dry the Magiſtery of Flowers or Herbs, before you colour the body of the Balſom; otherwiſe, there would be no union, nor perfect mixtion made, and by conſequence no colouring.

The ſame operation we have deſcribed may be made upon Flower of Roſes, Piony, red Poppy, Iris, Scarlet-grain or Kermes, to make

Magiſteries thereof, which will be uſeful to colour the Balſoms of Flowers without any forain mixture.

Before we end this diſcourſe of Balſoms, we will after the learned *Sennertus*, teach the manner how to prepare Balſoms, as to the internal part in another way then with Sugar; which, though they be not ſo pleaſant, yet will have no leſs, if not more vertue, and will contain, as in a ſmall volume, the efficacy of the Mixt whereof they receive their compoſition. Take then ℥ j. of the extract of the Plant, of its Root, Flower, or Seed; to which add ℥ ij. of ſelect Manna, mix them together upon a gentle heat; and when the mixture is cooled, add ʒ j. *ß*. of the diſtilled Oyl of the Mixt, and ſo ſhall you have a Balſom which may be exhibited in *Bolus*, or mixt in Broths, or given in other Liquors appropriated to the diſeaſe.

EXAMPLE II.

Of the Root of Enula Campana.

THis Root deſerves very well we ſhould ſpeak of its Preparation, and make ſome neceſſary Obſervations to inſtruct thereby the Artiſt; for, beſides, that it hath many vertues, and particular qualities, it will conduce to teach by the ſame method the Chymical Apothecary, what he is to do according to judgement and experience, in drawing from other Roots, as from this which is familiar with us, many good remedies to adorn and furniſh his ſhop with, where Phyſicians may have their recourſe when they need it, for the good of their Patients.

We begin by the chuſing of the time wherein this Root is to be taken out of the ground, that it may be abundantly furniſhed, of what we ſeek in it, which is a volatile ſpirituous and ſulphureous Salt, manifeſting it ſelf by taſte and odour. This Root then is to be pulled out of the ground in the beginning of the Spring, when it begins to bud and peep out of the Earth; for, if you delay longer, this vertue which is concentrated in the Root, and is the ſoul of Vegetation, explicates it ſelf and ſhoots out, to declare the viſible Character of its inviſible Idea, given unto it by the Creator of Nature, and ſo doth exhauſt it ſelf from its own ſeminal vertue, to ſupply the beauty of perfect Vegetation.

Having got a good quantity of Root thus qualified, and being yet tender and juicy, ſo that it may be cut in long ſlices, or round pieces;

waſh it well, then ſlit the moſt likely and moſt tender Roots in long bits, of the length of the fore-finger, and bigneſs of the ſmal; & cut the other in round pieces of the bigneſs of a Crown; then put them in a Glaſs Cucurbite in Sand with a ſufficient quantity of clean water, cover it with a Head Limbeck, and fit to the ſame a Receiver, and exactly lute the joynts thereof; then give it a gradual fire, and diſtil it, encreaſing ſtill the heat, till what in the Veſſel begins to boyl, that the Roots may be well boyled. By this Operation many things are performed at once; for, when the Root is ſo boyled, as to be grown ſoft to the hand, you may with the remaining decoction in the Cucurbite, boyl Sugar to the conſiſtency of a Sugar Roſat, therein to dip the long ſlices, after they have yielded their ſuperfluous water upon a Sieve turned upſide down; and ſo ſhall you have a liquid preſerve of *Campana*, which will keep long: if you boyl further the Sugar, and put the Root once again in it, and dry it in a Stove, you ſhall have a dry and ſolid Preſerve for ſuch as will uſe it in travelling. Moreover, you may beat the round pieces, after they are ſtrained, and the liquor expreſſed in a Marble Mortar, and extract the pulp thereof, which preſerve with Sugar boyled in Lozenges, and it will be a very good kind of Preſerve alſo for its peculiar uſes; but, which alſo will ſerve as a body, to receive other remedies for the Spleen and Breaſt, and ſo you may frame Opiats and Electuaries, which will be very excellent.

But we keep that which is beſt for the end, which is the ſpirituous Water and volatile ſulphurous Salt, extracted by diſtillation, during the boyling of the Root, and which ſhould have been loſt, had this decoction been made in an open Kettle or Veſſel upon an open fire: and would be a great loſs, and argue a defect of jugement, knowledge, and experience in the Artiſt: for, this diſtilled Water hath the ſame taſte and ſmell as the Root, and by conſequence, doth poſſeſs the beſt part of her vertue, becauſe it is filled with a very excellent and ſubtile Salt volatile, which aſcends into the Head of the Limbeck under the form of Snow, and cleaves to the ſides thereof, when heat cauſes the Water to penetrate into the very center of the Root, and when this Salt is freed from the muciliagenous ſubſtance of its body, it is ſublimated by the fires activity into the Limbeck's Head; it is true, that it doth not remain long there, being immediately diſſolved by the acqueous aſcending vapours, and carried along with them into the Recipient, and this Salt doth communicate to the Water its taſte, odour, and efficacy. Let thoſe which deny credit to my diſcourſe, proceed in the work as I have juſt now related, and watch exactly when they ſhall obſerve the Limbecks Head to be full of white vapours, and ſome ſubſtance cleave to the ſides of it; let them be provided with another equal Limbeck; then taking away the firſt, ſubſtitute a ſecond in its room; and then will they find themſelves convicted by their own ſenſes of the truth I have aſſerted; for the ſpirit of this Salt, ſhall fill their Noſe and Brain immediately with the genuine ſmell of the *Enula Campana*; and, if they apply a little of the ſublimated Salt upon the tongue, they will confeſs, the very Plant not to have even had ſo ſubtile, penetrative, and efficacacious a taſte; ſo that it would be an irreparable damage, and a groſs ignorance, to loſe the principal and more vertuous part of the ſubject which is wrought upon.

Thoſe that will make the Extract of the *Enula*, muſt dry it a little more than half; then reduce it to a groſs Powder, and place it in a double Veſſel of the Blind Head with ſubtile white Wine, to the height of four fingers, which they ſhall digeſt and extract in gentle heat of aſhes, until the Wine be impregnated of the taſte, ſmell, and yellowiſh colour of the Root; then ſhall they draw again what is impregnated, and put new and freſh Wine until it attracts no more; then muſt be made an expreſſion of the whole, which put in a Cucurbite in *B. M.* with the requiſite precautions, to draw the ſpirit and ſpirituous Water, until the remaining ſubſtance hath neither ſmell nor taſte left; clarifie after this what is left in the bottom of the Veſſel, and evaporate in an Earthen diſh in aſhes, until it comes to the conſiſtence of an Extract, which ſhall poſſeſs in it ſelf all the vertue of what is fixed in this Root: which is not deſpicable, becauſe it opens the Belly, and ſtrengthens the Stomack. The *Doſis* is from ʒ j. to ℥ *ß.* and this extract is very efficacious to diſſolve and evacuate the fixt, glutinous and tartareous ſubſtances, lurking in the Ventricle, Spleen, or Breſt: but chiefly, it conduces to the cure of Periodical Aſthma's, provided you mix ſome Diaphoretical Antimony, or volatile Salt of Carabe or yellow Amber, which will not fail to ſtrengthen the Ventricle, and appeaſe the motions & meteorical ſwellings of the Spleen, which for the moſt part do oppreſs the Diaphragma, one of the chief Inſtruments and Organs of Reſpiration, and which cauſes the oppreſſion of the ſtomack, and ſhortneſs of breath. This Extract ſhall be a rule whereby to prepare thoſe of Valerian roots, Pellitory of Spain, Carline-thiſtle, and chiefly Contrayerval, which is a root coming from *Peru*, and one of the moſt Soverain remedies againſt Poyſon: but chiefly in all Peſtilential and malignant diſeaſes, as Camp and purpled Feavers, Meaſels, and Small Pox, becauſe it rids potently away the venom of it, and expels dangerous ſeroſities by Sweat and Urin. It is marvellous alſo in corruptions of the Stomack, and chiefly Worms. There are even ſome, which believe, that its uſe is capable to diſſipate the charm and poyſon of Philters, or amorous Potions. The *Doſis* of the Root in Powder is from ℈ ß. to ʒ j. in Wine or Cordial, or ſudorifick Waters, as that of *Regina Prati*, *Carduus Benedictus*, or Mead Sweet, and Saſſefras. But the extract of it made by exact operation, & the ſpirit drawn by diſtillation, are without compare much better than the material body of the Root, and their *Doſis* leſs by half. I could not refrain from ſpeaking ſomething in my way concerning this noble Root, knowing that it is yet concealed to moſt of the French Apothecaries: and I make no queſtion, but that thoſe which by the order of Phyſitians ſhall make uſe of it, will find thoſe effects to anſwer the vertues I have attributed unto the ſame.

Of the Root of Conſolida Major, *or Great Comfrey and Satyrion.*

AFter I have ſpoken of Odoriferous and Aromatical Roots, which are of a high taſte and full of ſenſible volatile Salt: we muſt ſpeak afterwards of Mucilagineous and almoſt Inſipid Roots; but, though they ſeem ſo to be taſteleſs, yet do they in ſufficient abundance, partake of much vertue; provided, the Artiſt may free and untie them of the clammineſs & viſcoſity of their ſubſtance, to bring to light the ſalt and ſpirit in them contained, the quickneſs and efficacy whereof are as it were impriſoned and fettered by the ligaments of this clammy and agglutinating ſubſtance, which hinders them to produce within us, thoſe noble effects which they are capable to produce, and which they conceal in their own center. But to perform this, there is no way but by Chimical operation, which diſcovers the hidden vertues, and manifeſts the myſteries contained in each Mixt. We will begin with the preparation of the great *Conſolida* or Comfrey, which though viſcous and inſipid, produces notwithſtanding very rare effects outwardly and inwardly applied; for it is of a miraculous vertue to diſſolve all contuſions, ſtrengthen the ſinewous parts of the Joynts in all ſorts of luxations. But it is much more efficacious in plaiſters, with powder of the Stone called *Oſtœcola*, both to hinder the accidents of fractures, as to generate the *Callus*, neceſſary in the re-uniting of broken bones. And if this Root doth produce ſo remarkable effects for the external parts; it is no leſs wonderful to ſtop the ſpitting of Bloud, whether occaſioned

ned by the rupture of ſome Vein, or proceeding from the eroſion of the Veſſels, which ordinarily happens in the Breaſt or Throat: Moreover, the uſe of it doth continue the healing of the ſeveral kinds of Hernia's: Provided at the ſame time the part affected be kept tyed up with a good fillet, and every third day a Plaiſter or *Cataplaſma* of the ſame Root be applyed, with *Crocus martis* aſtringent, and dulcified Earth of Vitriol. This we have only mentioned, to let the Reader know, that this Root is full of a wonderful vertue, if ſo be the Chymical Apothecary is capable to digeſt and extract it according to Art, ſeparating the hurtful heterogeneites, which hinder this ſo conſiderable hidden vertue from being reduced into act, to bring to light the myſtery of Nature, which every individual ſubſtance deeply hides in its center. And to attain thereunto, he muſt proceed in this following manner.

The manner of making the Extract or Bloud of the Roots of Great Comfrey and of Satyrion.

Although this Extract or Bloud may be made with the Root only of the Great Comfrey, and would ſo contain much vertue: I find notwithſtanding very neceſſary to joyn unto it the Roots, Leaves and Flowers of Saracene Comfrey, and thoſe of Bugle or middle Comfrey; alſo of *Prunella*, or of ſmall Comfrey and Seeds of St. Johns-wort; becauſe the Balſamick Salt of the Leaves, and the embryonated Sulphur of the Flowers and Seeds, will infallibly contribute to the perfection of that remedy which we are about to deſcribe.

℞ ℔ij. Roots of the Great Comfrey, and as much of the Roots, Herbs, and Flowers of the three other kinds; cleanſe and pick, & then waſh them well; and having beaten them in a Marble Mortar, with a woodden Peſtle, until all be reduced to a Maſh, add *lib.* ß. Seeds of St. Johns-wort, reduced likewiſe to a Pap, by beating in the Mortar and ſprinkling it with good white Wine; add to the whole, *lib.* j. of crumb of Rye-bread, and as much of Wheaten-bread; mix all together very well, then imbibe it again ſomething more with a little of good white Wine, until it be converted to a kind of thick maſh or pap, ſomething clear: which put in a Matraſs with a long Neck, ſtopped with another Matraſs, whoſe Neck ſhall be inſerted in the other, the length of four inches; Lute the joynts very exactly, with beaten whites of Eggs, Linnen, Bladder, and quick Lime, as we have taught above, where we have treated of Lutation: Suſpend the Veſſel on a vaporous Bath, or put in the heat of Horſe-dung to digeſt, or in ſome other analogous heat, and give it a ſlow and digeſtive heat, until the matter be changed into a kind of chyle, red and as high coloured as bloud. Then let the Furnaces cool again; take away the Veſſels, and run through new and clean Linnen the matter which you muſt ſtrongly expreſs and ſtrain. This expreſſed ſubſtance thus red and coloured, put in a vaporous Bath, to make a ſecond digeſtion thereof, and a more exact purification; for, the liquor will much better clarifie, and the feces and remaining impurities, will make a ſediment in the bottom of the Veſſel, which muſt be ſeparated by a gentle inclination, until the liquor be clear, red, and tranſparent, ſo that no more impurities appear in the bottom. Put then this Liquor ſo depurated in a Cucurbite, in the vaporous Bath or *B. M.* and draw off by diſtillation about the two third parts, and in the bottom will remain the true Balſamick extract of thoſe vulnerary Roots, which properly enough are called the Bloud of the Great Comfrey: Of wonderful vertue againſt all the kinds of Rupture, being ordered with the intimated pre-cautions; it is alſo a moſt rare and excellent help to conſolidate inward Ulcers, but chiefly thoſe of the Breaſt: and alſo very good, being mingled in vulnerary inſections; as alſo to dip in the Linnen or Tents, applied to the Orifice or Lips of wounds. The *doſis* is from ℈ *ß.* to ʒ j. in the water drawn off by diſtillation, white Wine, or any other convenient liquor, ſuch as are vulnerary potions; but you muſt continue for ſeveral days every day faſting; and even in inveterate diſeaſes, it muſt be uſed during the ſpace of a Philoſophical Moneth, which is 40 days.

This method of Preparation muſt be exactly followed, to make the extract or bloud of Satyrion Roots: except only that no other ingredient is to be added in the compoſition of it, but, that of Bread and Wine, with ʒ j. of very good Ambergrice, to each pound of the matter which is to be digeſted. The *doſis* is likewiſe the ſame with the former Extract, both good to ſtrengthen the Womb, and render fruitful and apt for generation. It is alſo a very ſecure ſpecifick to put and reſtore again to their own temper all the parts deſigned to copulation, & the dependances of it. Thoſe that to each pound of Satyrion Root, before they be put in digeſtion with the Bread and Wine, will add ℥ j. *ß.* of Vipers fleſh dried in *B. M.* will render this Remedy much more efficacious. And note, that theſe Roots muſt be taken up in the beginning of the Spring, and that you muſt only take that cod or ſwelling part which is ſmooth and full, and reject that which is rugged and ſoft, the ſignature of this Root doth evidently reſtifie, that Nature hath furniſhed it with neceſſary vertues for the uſe of thoſe parts whoſe figure it repreſents.

Of

Of the Root of Female Fern.

Though this Root be very common, yet is it not made uſe of enough, conſidering the great vertues it doth poſſeſs. Now that which hindereth, for the moſt part, Phyſitians from making legitimate Obſervations, of the particular and ſpecifical vertue of things, is, that for the moſt part, they confound them one with the other, which is the cauſe they cannot properly determinate, to which of the ingredients they are to attribute the effects of thoſe Remedies which they have preſcribed. But Chymical Philoſophers proceed otherwiſe, and, as they know Nature to be but one and uncompounded, ſo will they follow this good Mother and Guide as near as it lyeth in their power. And as by the ſenſes they have diſcovered, that the Root of Female Fern hath in it ſelf ſome coagulated viſcoſity, which teſtifies it to have much of a volatile ſulphureous Salt, of a rare and noble vertue, eaſily diſcerned by its bitterneſs mixt with an aſtringency, but this vertue to be hidden under the ſhade of the body; ſo have they found it neceſſary to free it from its poiſon, by the means and help of Fermentation in the following manner.

℞ XL. or L. ℔. of this Root gathered in the beginning of the Spring, and then when it begins only to bud out in a ſmall yellow ſhoot from the ground, that it may not have loſt yet any part of its internal ſubſtance by vegetation; waſh and cleanſe it from all the Earth which cleaves to it, and ſeparate it from all other ſuperfluities; without taking away, nevertheleſs, that which already is budded out: ſhred it, & then beat it well in a Marble or Stone Mortar, then put it in a Fat of the bigneſs of about xv. or xx. Buckets, and pour upon it xij. Buckets of warm Water; of a degree, as it were, to ſcald Chickens; and having well agitated the ſame, put two Buckets full thereof to ferment with Yeſt, or ordinary Bread leaven, and a little Rye Flower: and when the liquor begins to ſtir or raiſe in boyling in the Buckets, pour it in the Cask, provided the Liquor alſo contained in it, be of a moderate heat, ſo, as without inconveniency the hand may be ſuffered in it; cover the Veſſel, and let the ferment or leaven perform its action, after you have ſtirred all very well together; after which, diſtil the fermented liquor in a Still Body *S. A.* two days after fermentation is ceaſed. All being thus diſtilled, and your diſtillation continued until the matter yield no more of ſpirituous and ſaline taſte; put again all what hath been diſtilled in a Stillatory Veſſel, and rectifie the Spirit, laying aſide that which comes firſt, as the moſt efficacious and penetrative; and ſo the ſecond and third, until it yields nothing more, but an inodorous and inſipid Phlegm. This Spirit is a great opener and diſopilator, dedicated in general, to open the Obſtructions of the Intrals; but ſpecially, thoſe of the Spleen and Matrix. The *doſis* is from ʒ ß to ʒ ij. and even to ℥ ß in the laſt Water drawn off by rectification, or in Broths or white wine. And the fermentation and diſtillation of this Root, muſt ſerve as a pattern for all other Roots, either of the ſame nature, or coming near it.

Of the Roots of Jalap and Mechoacan.

AS we have propounded to our ſelves to afford examples of Roots that are different in their nature: we have thought fitting to take that of Jalap and Mechoachan, becauſe they are two purging Roots, both equally expelling ſeroſities, and yet differing among themſelves; for, the one is of a reſinous quality, which is Jalap; and the other mucilaginous, mixt with roſin, and a ſaline and inſipid ſubſtance; in which partly, is placed its purging faculty, provided, it be well extracted, and ſuch is Mechoacan: for which cauſe, the Artiſt is obliged to uſe divers ways of Preparations, and different *Menſtruums* to extract the vertues of theſe Roots, that they may be exhibited in a leſs *doſis*, and cauſe them work with leſs violence.

To prepare the Magiſtery or Roſin of Jalap.

THE Root of Jalap was firſt brought unto us from the *India's*, and is more or leſs full of vertue, according as it is more or leſs reſinous, which Roſin is nothing elſe but a ſulphureous volatile ſubſtance, more concocted and exalted than the volatile Salt, ordinarily found in other Roots, and as it is in this reſinous and fat part of the Simple that the Purgative vertue is placed, and that nothing but the ætherial, volatile and ſulphureous Spirits, are capable to extract and diſſolve this Roſin; Chymical Artiſts do commonly uſe the rectified Spirit of Wine to make this Extraction, which is thus performed.

℞ ℔ j. of well choſen Jalap Root, *viz.* full of round blackiſh circles from diſtance to diſtance, till they meet in the Center, cloſe and well compacted, and ſhining inwardly when it is broken; reduce it to ſubtile Powder with a Sieve, & having placed it in a Matraſs, pour upon it ſpirit of Wine well rectified and deflegmated; digeſt it ſome days in Embers, and when the *Menſtruum* is ſufficiently coloured draw it off by inclination of the Veſſel, and filtrate it, and continue this extraction until the ſpirit of Wine tinges no more. Put all your tinctures filtrated in a Cucurbite, and draw off by diſtillation in *B. M.* the 3 parts of the Spirit, which will be uſeful yet for the like operation again; after this, draw your Cucurbite from the *Balneum*, and affuſe upon the remaining liquor, about a pint of very clear water, which will precipitate the Jallap root to the bottom of the Veſſel: becauſe the water weakning the ſpirit of Wine which held the diſſolved Roſin, and kept it flowing, cauſes it to loſe its cold, and there being not ſtrength and nimbleneſs enough in the ſpirit to keep the ſolution, makes it precipitate & fall towards the bottom. Put again your Cucurbite in *Balneo*, & draw off the remaining ſpirit of wine mixt with the water, and that for 2 reaſons; the firſt, That you may not loſe that portion of ſpirit of wine, which is ſtill of uſe; and the ſecond, becauſe by that means you make yet as a ſecond precipitation of Roſin, the ſpirit of wine holding yet ſome portion in it ſelf, as it does evidently appear by the milky whiteneſs of the water. Take the Roſin from the Cucurbite and put it in an Earthen Platter, and waſh it three times with pure water, to take away the tang of the ſpirit of wine, which every one is not equally pleaſed with; but you muſt waſh it the fourth time with Roſe-water and Cinamon mixt together; then dry it gently in embers, and keep it for your uſe. The *doſis* of this Roſin is from iij grains to xv. in *Bolus*, Conſerve, or Jelly of Quinces and Gooſeberries; it may be grinded alſo upon a Marble-Stone with three times as much of *Cremor Tartari*, until the whole be reduced to an impalpable powder; then diſſolve a *doſis* thereof in water or broth: but you muſt be very cautious, when you adminiſter any of this Roſin, or of the others that are alike, and chiefly thoſe that are of a purging faculty; becauſe, that as their ſubſtance is not eaſily diſſolved in aqueous liquors, but contrariwiſe, does reincorporate when you think it to be more exactly mixt; and moreover, that the Stomack is fill'd moſt commonly with ſome moiſtneſs, you may have good reaſon to fear, leſt this Roſin ſhould unite again, and cleave to the ſides of the Ventricle, in the paſſage of the Maw-gut, or in the *Duodenum*, which is for the moſt part the cauſe of after-purges, not properly to be imputed as an ill effect of the remedy, but to an accidental cauſe, occaſioned by unskilfulneſs in adminiſtring the ſame; for, when theſe Medicaments are well diſſolved, and joyned & allied to the aqueous liquor, by the means of ſome neutral body all fear is over. You muſt then make uſe of yolks of Egs to dilute and diſſolve purging Roſens, that they may the better incorporate and allay either with the Ptiſan or Broth wherein they are exhibited to the Patient: for, the reaſon of fearing theſe kinds of remedies never proceeded but from accidental cauſes; they, in themſelves, and their operation, being in no wiſe dangerous, unleſs, when they are ill diſſolved and united with the aqueous liquor: But, we thought very neceſſary to give this Advertiſement in the way, by reaſon of thoſe ill accidents which daily do happen thereby.

To make the true Extract of Mechoacan.

℞ ℔ i. Mechoacan well choſen, not carriated or rotten, neither mixt with Briony-Root, which will eaſily be known and diſcovered by the ſight and taſt. By the ſight, becauſe Mechoacan Root hath circles from the center to the circumference, which that of Briony hath not; and moreover, the taſte doth yet better diſcover the truth, becauſe, that of Mechoacan hath only a farinaceous and inſipid taſte: but, that of Briony pricks the tongue and throat, when long kept in the mouth: you muſt then take the whiteſt Mechoacan, and that which eaſily breaks without making any duſt, by which the corruption and cariation is diſcovered. Put this Root thus well choſen, into very ſubtile Powder, and having placed it in a Cucurbit of Glaſs, pour upon it Spirit of Wine, not rectified, to the height of four fingers and more; cover the Cucurbit, with a Blind-head, and the Joynts being well luted, digeſt the whole in heat of embers, until the *Menſtruum* be ſufficiently coloured, which draw off by inclination, and re-affund new Spirit, re-iterating ſo long, that your *Menſtruum* will tinge no more; ſqueeze the Root hard, and filtrate all the Extractions, and diſtil in *B.M.* to draw off again the Spirit of Wine uſed for a *Menſtruum*, until it be altogether inſipid; then ceaſe the fire and take the roſenous ſubſtance which will ſwim above what is left in the Veſſel, and dry it in a ſmall Platter with a ſlow fire in Sand: Put the liquor wherein the Roſen was contained in a leaded Earthen Pan, adding ʒ j. of Salt of Tartar; and therein put alſo the Cakes left after expreſſion, which let boil together to half-conſumption; clarifie this decoction with whites of Eggs, and run through the cloth, evaporate it ſoftly in ſand, to the conſiſtency of a liquid Extract; to which add the Roſen reduced to very ſubtile Powder, with three or four peel'd Almonds, and ʒ ij. Sugar, and ſo keep this Extract for uſe whenſoever there is occaſion, or to adminiſter it in Pills. You muſt note in your way, that it is not without reaſon, I have preſcribed the addition of Almonds and Sugar, when the Roſen ſhall be triturated. For, you muſt not think it only done, to hinder the ſticking of it to the Mortar or Porphyry, as it ſerves alſo for that purpoſe: But it is moreover, that theſe two Subſtances may be as uniting *mediums* to joyn cloſely the Roſen with its Extract, and to facilitate alſo the diſſolution thereof in aqueous liquors. This Extract is of ſingular efficacy to evacuate ſuperfluous ſeroſities from all the parts of the body, and leſs active and violent then the Roſen of Jalap, which is uſed to the ſame ends as this remedy. It is above all, a Specifical to purge the head, the nervous parts, and the breaſt; and therefore is very ſeaſonably uſed in all Catharrous affections, Dropſies, and all Arthritical pains, but more particularly in Venerous diſeaſes. The *doſis* is from vi. grains to xxx. either in Pills, or diſſolved.

Of the Roots uſed for the Extraction of Fecula's.

WE cannot enough admire the long practiſed abuſe, even by the wiſeſt and moſt experimented Phyſicians, concerning Fecula's; and I wonder, that thoſe which ſo often have advowed, confeſſed and taught, that all the vertue of Subſtances reſides only in their Salts, but chiefly, of Vegetables: I wonder, I ſay, that theſe Chymical Phyſicians, ſhould have made uſe of Fecula's, and attributed unto them the vertue of opening, diſſolving, and penetrating even into the utmoſt digeſtions. And to prove the true ground of my wonder, you muſt know, that the Fecula's are nothing elſe, but the farinaceous and inſipid part of the Root; and, to ſpeak properly, as the white Starch of it: Now there is no body ſcarce, but knows, that a ſmall quantity of the ſame will coagulate a great deal of water, and ſo conſequently, muſt have the ſame operation in the Stomach, when the Fecula's are introduced in it, and the natural heat begins to act upon, as the leaſt heat doth upon white Starch. But to diſcover the better this miſtake, I will deliver the moſt exact and artificial way of preparing Fecula's, to ſhow even to the meaneſt apprehenſion, that I have aſſerted nothing againſt truth; and that I condemn this common abuſe, grounded only upon reaſon and good experience.

The

The manner of preparing Fecula's.

FEcula's are commonly made out of five kinds of Roots chiefly, which are *Arum*, or Coockow-pint, *Iris*, Piony, Briony, and great Dragons. But it will ſuffice, to give an example of any of the five, which will be as a model for the reſt, and all thoſe that are of a like nature. Firſt of all, the time wherein the Root muſt be gathered, is to be attended, when you will make the Fecula, and that is, when the Plant begins only to put out the leaſt bud, otherwiſe, no good could be done upon it. ℞ then Briony Root at ſuch a time, and waſh it exactly; then ſcrape the out-ſide of the Root, and ſo get the ſubſtance by ſcraping very cleanly; then expreſs hard the ſame, and let ſettle in the bottom of the Veſſel a kind of white feculency, until the juyce be all cleared, which draw off ſoftly by pouring down: and as you will find a mucilagineous and yellowiſh ſubſtance, above the whitiſh Flower which ſettles in the bottom; you muſt pour upon it a little of lukewarm clear water, to make the ſeparation thereof, by a ſlow and circulary agitation; that being ended, you muſt put this farinaceous Subſtance or white Starch in a Marble Mortar, and agitate the ſame with clear water, until it be as white as Milk, then percolate this white Water through a new Tamy ſomewhat cloſe, that the groſſer part may remain within; then cover the Platter, and ſuffer the Fecula to make a ſettlement, re-iterating this agitation with new Water three or four times, after which, you muſt ſeparate the Water by a ſoft and ſlow inclination; then cover the Platter with a white Paper, bored through with many ſmall holes of a Needle; then expoſe it to the Sun, until the Fecula be dry, which will be as white as any Starch, if you proceed in the operation with exactneſs and cleanlineſs.

This is the manner of artificially preparing your Fecula's: but, it were to be wiſht, that they were endowed with the rare vertues attributed unto them; for, there is no judicious man, never ſo little initiated in the myſteries of Chymiſtry, who doth not conceive, that this earthly and feculent portion, which by its own weight is ſevered from the juyce, is rather an excrement of the Root, than a ſubſtance containing its vertue; for, it is not with the family of Vegetables as with that of Minerals and Metals: Since Vegetables have only their vertue contained in a ſaline and volatile ſubſtance, whereas the Metals and Minerals are fixt in a manner; and, that in this fixt ſubſtance and material and cloſe center, is placed their chief vertue. Now this ſaline ſubſtance is, without doubt, in the juyce of the Plant; ſince it is a proper quality of Salts to diſſolve themſelves in Water, and if any part of it ſhould remain amongſt the Fecula's, the waſhings which are to be uſed with ſingle pure Water to purifie them, carry away, without any doubt, the remainder of their vertue; ſo, that there is nothing left but a ſubtile Earth, or a meer white Starch or Flower: It would then be much better, to uſe thoſe Roots, whereof the Fecula's are extracted, after they have been dryed, either whole, or cut in round ſlices; for, then may the Artiſt be confident, that their ſaline and mucilagineous vertue is concentrated in their own body by exſiccation, and, that nothing but the aqueous phlegmatick and unneceſſary ſubſtance is vapoured away. I dare moreover affirm, that what is commonly thrown away after the expreſſion of theſe Roots, is without compare, worth much more, then the feculas from them extracted. It is much better to ſtrain the juyce and depurate it, and then evaporate it in *B. M.* to a conſiſtency of inſpiſſated juyce or extract, to make uſe thereof in caſe of need, ſince it will be endowed with the vertue of the Root, and will not fail to produce the hoped-for effects: with this I ſhall put an end to the exemplification of Roots, to come to the other parts of Plants, according to their Order.

SECT. II.

Of Leaves.

ALthough we have amply and generally ſpoken of Leaves, of Vegetables, when we did handle their preparation, and their difference, in the beginning of this Chapter of Vegetables: yet there remain many things to add, as much concerning the Diſtillation of their ſingle Waters, as of their Spirits and Oils; for, as concerning their extraction and reduction into Salt, we have ſpoken enough of it heretofore; yet will we ſay ſomething more particularly of it.

We have ſufficiently inſtructed the Artiſt how to proceed with odoriferous Plants; thoſe that are acid and juicy, thoſe we have called Anti-ſcorbutick, which are juicy and biting, by reaſon of the volatile Salt contained in them, to draw out ſeveral kinds of preparation: but, we muſt teach here, the way to diſtil Plants for the general uſe of the Chymical Apothecary, according to the *claſſis* unto which they belong.

To this end, the Artiſt ſhall have recourſe to the Figure hereby annexed, for the erecting a Furnace fit for his uſe in the diſtilling of inodorous Plants, and not acid, ſuch as are Ladies-mantle, or Lions-foot, Burrage, Bugloſs, *Carduus Benedictus*, Eye-bright, Fumitory, Lettuce, Mercury, Nightſhade, Cowſlip, Purſlain, Dandelion or Taraxacon, Varvin, & all other Plants of this *claſſis*, or that are kin to it. To the end this Veſſel may be uſed with ſome advantage, we muſt briefly explain the way how to do it, and the reaſons why it is to be preferred to others. Thoſe that have made uſe hitherto, and make yet daily, of the Leaden Bell, and its Veſſel under, to diſtil the Waters of Plants and Flowers, could never hinder their Waters to contract an ill odour or burning ſmell, which is called *Empyreuma*, becauſe they were impatient and over-haſty in ruling their fire, and that they neglected to make uſe of ſome interpoſed *Medium's*, to hinder the too violent action of the fire, upon ſo ill fixt a matter as is in Vegetables: but, when Chymiſts came to diſcover this defect, they made it their ſtudy to prevent it. And to this purpoſe have they invented the conſtruction of this Furnace by us repreſented, and likewiſe of the diſtillatory Veſſel it contains, whereof follows the deſcription.

Firſt of all, build a round Furnace of $2\frac{1}{2}$ foot diameter, and as much in height, wherein is left room for an Aſh-hole, and a *focus* for the coals to burn in; a foot higher then the grate of the *focus*, appropriate a Cauldron or Kettle made with Plates of eight inches deep, and of each ſide an inch leſs in breadth than the diameter of the Furnace, that it may receive heat from all parts; this Cauldron or Kettle muſt alſo have a brim three inches broad, to hold faſt upon the ſides of the Furnace, and ſupported under by two croſs bars of Iron. This brim muſt have eight holes in it, of one inch diameter, equally diſtant one from the other, which may be made to open and ſhut, with the ſame mettle as the Culdron is, that theſe holes may be inſtead of Regiſters whereby to increaſe and ſuppreſs the fire. This Veſſel muſt have in the bottom two inches thick of Sand or Aſhes, to place thereupon the ſecond Cauldron, which muſt be of tinned Copper, $1\frac{1}{2}$ inches leſs of each ſide than that of Iron which is deſtinated to receive it, and of five $\frac{1}{2}$ inches height; this is the Veſſel which muſt receive the Plant, Fruit or Flower which is to be diſtilled; or any other liquor, provided, it be not acid. This ſecond Veſſel is to be covered with its Head Limbeck, which muſt be capacious and riſing in the way of an Arch-roof with two Channels or Noſes, by which the water is drawn off as it condenſes in it; the remaining proportions may better be conceived:

ceived by the Figure hereunto annexed; but we muſt, after this, ſpeak of its uſefulneſs.

The chief end of the Artiſt in the conſtruction of this Furnace, and its diſtillatory Veſſel, hath without queſtion ~~been~~ to hinder the Empyreumatical ſmell, which is ordinarily contracted by the too near action of the fire upon the Veſſel containing the Plant, which is to be diſtilled: but, that cannot happen here for theſe following reaſons; Firſt, That the fire doth not immediately act upon the Veſſel containing the diſtillable ſubject, ſince it meets the bottom of the firſt Cauldron which offers the firſt reſiſtance; after this, the Sand or Aſhe; make the ſecond, becauſe either of theſe two ſubſtances breaks the action of that devouring agent, and ſo the bottom of the Copper Veſſel receives only a temperate heat, and yet ſufficient to cauſe all the moiſture of the mattet to be diſtilled in the Limbeck Head to aſcend, and there to be converted into Water, which is received in appropriated Recipients, and fitted for that purpoſe: Secondly, the Artiſt is not tyed to ſo great a care, nor ſo tedious an attendance: for, when he hath once put his diſtillation in a way, he may fill the *focus* with fewel or coals, without fear of any evil accident, provided he takes care to ſtop exactly the doors of the *Focus* and Aſh-hole, and to leave no tranſpiration of Air to his Regiſter, or at leaſt ſo little, that it may ſimply be capable to feed and entertain the fire in its degree, when the two Noſes of the Limbeck do drop in an orderly way, and without intermiſſion: for then is he aſſured that he need not heed the governing of the fire ſix, eight, or ten hours.

But that which is yet more advantagious and conſiderable, is, that the Waters thus diſtilled, have all the requiſite vertue in themſelves, which doth conſiſt in the eſſential Salt, or the volatile Salt of the Leaf or Plant whole with its Flower: but, you are to obſerve, that the matter to be diſtilled muſt be turned and ſtirred every four hours, if it be ſolid, raiſing ſoftly the Limbecks Head by the ſtring faſtned to its pully for greater facility. And when the Plant ſhall be wholly dryed, it will be found void of ſmell, dry, and eaſie to be crumbled; in ſuch a wiſe, that it may eaſily be reduced to Powder with the fingers end, without any kind of burning at all; but contrariwiſe it preſerves a green colour, more or leſs brown, or blackiſh, according as the Plant was juicy.

This Veſſel doth not only ſerve toward the diſtillation of Herbs, but is uſeful alſo, to that of their Juyces; provided, they have been depurated in *B. M.* before they be put in the Still-Body, to avoid that the herbaceous odour, proceeding from the feces of the Plants, may not be communicated to their water: ſo ſhall you have a very good water, and the inſpiſſated juyce or Extract improperly called of the Plant. It conduces moreover, to the diſtillation of fruits, as to make the water of green Walnuts, Apples, Melons, Cowcumbers, and other like Fruits. With it may alſo be diſtilled Milk, Spern of Frogs, and Cow-dung; whereof is made the Water called *Mille Florum*; finally herein, better then in any other Veſſel, may be diſtilled the Flowers of Nenuphar, red Poppy, Elder, Beans, and Honey-ſuckle: and to end in a word, it is a Veſſel which ought not to be wanting in a Chymical Laboratory, or the ſhop of an Apothecary curious of diſtillation.

Theſe Plants diſtilled in this manner, may eaſily be calcined, becauſe they are very dry, and then their Salt be extracted, to joyn with the Water of the Plant; and ſo not only be made more full of vertue and efficacy, but alſo, fit to be better and longer preſerved, without any alteration: which is the Apothecaries advantage, the ſatisfaction of the Phyſician, and the benefit of the Patient.

We have yet to ſpeak here of odoriferous Plants, which are Mercurial and Sulphureous, and which attain not to the true period of their vertue; but, when the outward heat of the Sun, and their internal *Archeus*, hath concocted and digeſted their ſuperfluous moiſture, which was a hinderance to their perfection. This kind of Plant nevertheleſs, is, that which furniſhes us with the largeſt and faireſt harveſt to provide the Shops of Apothecaries, and beſtow their time with more advantage, and greater pleaſure. The Plants of this *Claſſis*, are Wormwood, Sothernwood, male and female Aniſe, Dill, Chervile, Coriander, Fennel, Hyſop, Marjerom, Feverfew, Balm, Penny-royal, Parſley, Rhue, Sabine, *Scordium*, or Water-Germander-Tanſie, and all other odoriferous Plants, which have ſome analogy or correſpondency with thoſe of this *claſſis*. The right time of gathering theſe Plants to enjoy their vertue, is, when they are fully blown, and the Seed begins to be framed in their ears, or heads: for it is the right time in which the Root is wholly exhauſted, and that Nature doth aim at the concentring and uniting in the Seed, the vertue yet diſſipated and diſperſed in the ſtalk, leaf, and flowers, and in this embryonated Seed. But the Artiſt muſt neceſſarily prevent the cementation, otherwiſe, there would be little hopes to extract the vertue of theſe Plants, by help of diſtillation by Water as it is done in the ordinary way of diſtilling Spirits. The reaſon is, becauſe, whatſoever is of a ſaline and volatile nature, is in a manner digeſted, concocted and fixed by the union of this ſpiritual ſubſtance into an Oil-fat, clammy, and viſcous, which doth not eaſily communicate it ſelf to water, unleſs it be by diſuniting its parts and bringing them to fermentation, if I may ſo ſpeak: but it is unfit to labour in vain, ſince we can take theſe Plants in the nick of time that nature hath not yet brought that Vegetable to the height of its natural predeſtination, which is the perfection of the Seed, the ſpring of the perpetuation, and multiplication of beings.

When you ſhall have any of theſe Plants gathered in the morning, a little after the riſing of the Sun, in the ſtate we have related above; cut it very ſmall with Cizzars, and put it in a Copper body filled $\frac{1}{2}$ foot, near the brim, pour Water upon it to the ſame height, and apply the Moors-head, or Still; lute the Joynts with Paper fillets paſted with Pap made of Flower and Water, then apply the fire to it, and leave the door of the Furnace and Regiſters open, until the drops begin to fall in the Recipient, and that you may not without burning your hand, graſp the Pipe which is between the Moors-head and the Still-body; then cloſe exactly the Door and Regiſters, that the matter may not aſcend in a body into the Moors-head, by too violent an ebullition: but, that the vapours may only be raiſed and carryed to the Pipe (or Worm) which runs through the Fat wherein is the cold Water, which condenſes them in a Liquor mixt with Water, Spirit, and an ætherial and ſubtile Oil, as is evidently to be ſeen in the Recipient where the ſpirituous Water bears up the Oil ſwimming over. The fire muſt be maintained in the ſame degree, until the Water iſſuing forth, be without odor and taſteleſs. After which, open the body, and take away the matter contained in the ſame, which ſtrain, & ſqueeze the herb, to put to dry and burn for the extraction of the Salt. But you muſt clarifie the decoction, and evaporate to a conſiſtency of extract, which ſhall contain what is moſt fixt in the Plant; for, that which came out by diſtillation is of a volatile nature. You muſt let the Recipient, which contains the firſt part of what hath been extracted by diſtillation, be at reſt, that the oleaginous ſubſtance may in time ſeparate from the ſpirituous and aqueous, and gather above it; and this done, you muſt ſeparate the Oil and water by the help of a Cotton, which will draw it to it ſelf, and cauſe it to run into the Vial, which ſhall be ti'd to the upper part of the Neck of the Recipient, as it will appear more clearly in the annexed Plate, in the Figure adjoyning to the Furnace and its Veſſel: and when the Cotton ſhall draw no more, by reaſon of the ſinking of the Oil; you muſt cauſe it to aſcend, by pouring ſoftly more Water of the ſame Plant, whereof the Oyl is extracted, and ſo continue till all the Oyl be ſeparated from the Water. Having wrought upon a good Vegetable, and got good ſtore of ſpirituous Water, you may rectifie it to poſſeſs the Spirit by it ſelf, which will go forth firſt of all, and ſo continue your diſtillation, till the water comes without any ſmell, and then keep it for uſe.

This is the right method and way of Anatomizing the Plants of this laſt *claſſis*, to extract their vertue, and all what may conduce in them to the uſe of Phyſick: It is alſo the true method whereby you may attain to the intimate knowledge of Plants: for, as they abound either in Oyl, volatile, or fixt Salt, in Mercury or Spirit, the indication of their uſe for fixt or volatile maladies, *i. e.* where appear either Obſtructions or Colliquations, are to be taken: and I am confident, that Phyſitians will receive much more ſatisfaction this way, then if they ſingly argue & rely upon the firſt & ſecond qualities; ſo vainly hitherto attributed unto them by modern and ancient Authors: whence it appears, that Chymiſtry is the true Key to open Natural Bodies, whereby to diſcover their vertues, and apply them next to the uſes unto which by the Creator's Providence they have been deſtinated for the cure and eaſing of ſuch maladies unto whom the infirmity of our nature hath ſubjected us. It is not a fit place for us to enlarge here upon the vertues of the Spirits, Oyls or Eſſences, Extracts or Salts of theſe kinds of Plants, becauſe we intend only to ſhew a general way of Operation, without coming to partiuclars: but he that deſires to be better informed this way, let him conſult the learned and excellent Diſpenſatory, of the experienced *Schroderus*, Ordinary Phyſitian of the City of *Franckfort* on the *Main*: where, in a very compleat Abbreviate, he will find an ingenuous deſcription of the vertues of Plants and all other natural products, handled; with an order and method worthy of ſo eminent an Author, to whom the Common-weal of Chymical Phyſick and Pharmacy hath no leſs obligation than the Galenick.

We will put an end to this Section, by a deſcription of the manner to be uſed in extracting the Oyl of Plants, their volatile Salt, their Spirit and fixed Salt, without any addition; which is performed by a Retort in open fire in a cloſe Reverberatory Furnace: taking now for an example, the Plant vulgarly called Tobacco. Were we in a time where this Plant ſhould be leſs known, it would concern us to ſay ſomewhat of its orginal; but there are ſo few that can be ignorant, that it is brought from the *Indies*, that it would turn to importunity to the

Reader, to ſpeak any thing more thereof. Let us only mention in our way ſome of the names, becauſe Authors who ſpeak of it, have variouſly denominated the ſame. The *Indians* call it *Petum*, or *Petechenune*, whence the vulgar name *Petun* amongſt the *French*; and becauſe *Jean Nicot*, Ambaſſadour for the Crown of *France* in *Portugal*, was the firſt who did ſend Seeds to the Queen, it was called the *Queens-weed*, (*Herbe a la Reyn*,) and *Nicotian*. Others call it the Holy-weed, by reaſon of its wonderful effects. And though this Plant be now cultivated in *France*, *England*, *Germany*, and the *Low-Countries*, and doth proſper there very well; yet, that which comes directly from the *Indies*, dried and prepared there, is much to be preferred before that which grows in our Clime: for, the Sun's heat is too weak with us, to digeſt the moiſture contained in the ſame, and to prepare in it that volatile Salt, and Balſamick Sulphur, which does conſtitute the chief vertues of ſuch Remedies as are drawn out of it. Not, but that new and freſh gathered Tobacco, ſuch as grows in our parts, may ſerve to make Salves, Plaiſters, Syrups, Honey, and the plain Balſom, ſo as it is deſcribed in modern Diſpenſatories, as alſo many other common Remedies, mentioned in Authors, who have left upon Record the praiſes of this wonderful Plant. But, as we will anatomize this Plant without any addition, and give to underſtand, what are the beſt inward qualities of it: we think it fitteſt, to take well qualified Tobacco, ſuch as that which is brought from the Plantation of *Virginia* in the *Weſt-Indies*. And I cannot but declare my wonder, that Phyſitians and Chirurgions have not continued more to practiſe upon this Plant, & make uſe of it as much inwardly as outwardly, ſince it produces effects, which are above the expectation of thoſe which can dextrouſly apply the remedies it doth afford: but, that it may no longer lye buried in oblivion, you muſt diſtil it after this following manner.

℞ ℔ iij. or iv. of *Virginia* Tobacco, neither ſophiſticated nor corrupted; ſhred it groſly, and put it in a Glaſs Retort, which place in a Reverberatory Furnace, upon the cover of an Earthen pot turned upſide down, and kept up upon two Iron-bars, putting a handful of Aſhes or Sand upon the ſaid Cover, to hinder the breaking of the Glaſs by the contiguity of the Earthen cover, whoſe encompaſſing is to the Retort inſtead of a Lute, and a *medium* interpoſed to break the violence of the fires action: cover the Furnace, and fit your Recipient to the neck of the Retort, lute the joynts thereof, with a good ſalted Lute, and let it dry gently; then give a gradual fire, and encreaſe it by little and little, until the Recipient begins to be filled with clouds and vapours, at which time keep the fire in an equal temper, until the Glaſs begins to be freed from fumes; then give it the laſt and extreme degree of fire, which is that of flame, that the matter may calcine, and no volatile, ſaline, or oleaginous ſubſtance may remain, and when the Recipient grows clear of it ſelf, and that, though the fire doth continue its action, no vapour nor liquor comes out of the Retort, ceaſe your operation: All being grown cold, open the Veſſells, and pour what you find in the Recipient in a Glaſs Bottle, that the Spirit and Oyl may ſeparate one from the other; after this, filtrate the Spirit with Paper, and the Oyl ſhall remain in the Funnel with the Paper, which you muſt break with a little hole in the bottom, and ſo make the Oyl drop in a Vial, then rectifie the Spirit by ſeparating the Phlegm.

The Oyl may be kept without rectification for outward uſes: but, if you intend it for any internal uſe, you muſt rectifie it in a Retort in Sand or Aſhes; and to proceed more artificially, mix your Oyl with the remaining matter left in your Veſſel after the firſt diſtillation, until all be reduced to a maſs or lump, whereof you may make Pellets of a competent bigneſs to be put in a new clean Retort: which afterwards placing in a Sand Furnace, draw off your Oyl by a ſecond diſtillation, which will yield the ſame very pure and ſubtile; which then may be inwardly uſed for ſuch purpoſes as we ſhal mention here-under.

This done, put all what remained from the firſt and 2d. diſtillation, in an Earthen Pot not glazed, or in a Crucible, to be calcined with a circular fire, until it be reduced to whitiſh or grayiſh Aſhes, which you muſt put to digeſt in a Matraſs in Aſhes, with a ſufficient quantity of Phlegm, which came out in the rectification of the Spirit, to diſſolve therewith the Salt contained in theſe Aſhes; filtrate this firſt ſolution, and pour new liquor upon the Aſhes: and thus continue until the Water comes out taſteleſs, and inſipid, as it was firſt put in then put together all the filtrations, and cauſe them to evaporate in an Earthen Platter, to a skim in a boyling Bath, and ſo place it in a cool Cellar to ſhoot into Cryſtals, and dry it throughly in the ſame vapour, working it gently with a ſmall wooden Spatula, and, when it is throughly dry, keep it for uſe in a well ſtopt Vial.

We ſhall not labour here to make a deſcription of the general vertues of Tobacco: for there are ſo many modern Authors that have treated thereof, according to the rules of ordinary method, that it would be ſuperfluous; I am only obliged to ſay, that I wonder how theſe Doctors, who know Tobacco only by the rind, and ſuperficially by his firſt and ſecond qualities, do ſtretch the paſſages which they find in *Hippocrates* and *Galen*, to bring them to their own ſenſe; and make theſe two great Genius's of Phyſick to ſpeak for and againſt Tobacco, without ever having the ſight or knowledge of it, neither by its ſhape nor effects. Let us do otherwiſe, and ſhow, that Chymical Phyſitians are not only contented with the ſuperficies of things; but to the contrary, that they open them to penetrate to their very center, and diſcover what good vertue they do contain, and appropriate it afterwards to external and internal maladies, to which they found by reiterated experiences, noted with a ſolid judgement, that they did conduce.

The Spirit of Tobacco is ſo full of volatile Salt, that it muſt inſinuate thereby its vertue; it being the property of this Salt to deterge, attenuate and diſſolve whatſoever is againſt Nature, of whatſoever quality, and in what part ſoever contained: wherefore this Spirit may ſucceſsfully be uſed in the Aſthma and other oppreſſions of the Breſt, and the parts of it, proceeding moſt commonly from glutinous and tartarous matters, of which this Spirit is the true ſpecificall diſſolvent; it is taken in Hydromel, white Wine, Broth, diſtilled Waters, or inciſive attenuating and pectoral decoctions. The *doſis* is from iij. drops to xv. or xx. according to the age and ſtrength of the diſeaſed Patient. It works chiefly by Spitting, Urines, and Sweats, provokes even ſometimes Vomiting, if it meets the Stomack of the Patient full of any mucilageneous matter, becauſe this Spirit doth immediately act upon, elevates and ferments this hurtful lurking matter, and ſo *qua data porta ruit*: and if this Spirit is profitable, inwardly taken, its uſe is no leſs marvellous outwardly applied; for it hath not its like to mundifie ſinewous and cancerous Ulcers; above all, it doth rarely well in the curing of Fiſtula's: It excels alſo above all other Remedies, for freſh Wounds, and Contuſions, if it be mixt with Urine to waſh the parts; and afterward applied warm upon the wounded part: and, for the laſt commendation of this Spirit, let us ſay that *Hartmannus*, who was a very famous Phyſitian, as much renowned for the Theory as the Practical part, hath found no other remedy againſt the Critalline, which is the moſt pernicious and dangerous accident which can happen in the French Diſeaſe, than the Spirit of Tobacco, which appeaſes, as it were, miraculouſly the extreme pains of this pernicious diſeaſe; reſolves powerfully that horrid venemous ſubſtance by which it is cauſed; and hinders, in a ſhort time, the evil and mortal conſequences which do ever accompany it.

We have ſaid, that ſome part of the Oyl extracted from Tobacco by diſtillation, without rectifying, was to be kept, and that with much reaſon; becauſe as this Oyl is not deſtinated to internal uſes, ſo is there no need to purifie it, with ſo much exactneſs: there is notwithſtanding another reaſon yet more preſſing and pertinent, which is, that rectification ſhould deprive this Oyl of the greateſt part of the volatile Salt which it contains, and which is intimately joyned to its Sulphur. The greateſt external uſe of this Oyl, is to conſolidate new wounds, mundifie and cure all evil Ulcers, and remove all accidents of contuſions, becauſe it potently reſolves the extravaſſated bloud, and ſo doth hinder the heat and inflammation, which are ever fore-runners of ſuppuration, which this extravaſſated bloud preſuppoſes to be neceſſary: But it is never the intention of Nature, provided ſhe be in time aſſiſted by ſome balſamick remedy, ſuch as is the unrectified Oyl of Tobacco. It is alſo good for the Tooth-ach, and to diſſipate the chalky knots proceeding from the Gout, and Venery. Now, as it is both the volatile Salt and Oyl which joyntly produce theſe rare effects, it appears, that the unrectified is beſt for uſe; but when you will make any internal uſe of this Oyl, you muſt in a manner correct its empyreumatical odour, which is very unpleaſant, and cauſes a riſing of the Stomack, and that cannot be performed but by rectification: It may be with a very happy ſucceſs employed againſt Suffocations: and fits of the Mother, againſt riſings, inflations, and irritations of the Spleen, which do cauſe ſhort breath, by reaſon of the compreſſion of the *Diaphragma* or Midriff. It may alſo be exhibited againſt intermittent Feavors a little before the fit comes, in Water of ſmall Centaury and ground Pine: But I rather adviſe, that the *Clyſſus*, whereof we ſhall ſhortly ſpeak, may be made uſe of for this purpoſe. As for the fits of the Mother, or other accidents thereof, you muſt uſe the water of Penny-royal or Savin: and for the Spleen, water of Saſſafras, or of juyce of Chervil. This Oyl is a very good antileptical remedy, provided it be exhibited upon the fall of the Moon, in Camphir'd Theriacal Spirit, or in volatile ſpirit of Hartſ-horn, mixt of *Lilly Convallium* and Balm. The *doſis* is from ij. drops to x. But you muſt note, that this Oyl muſt be made ſoluble with Sugar powder'd before you mix it with aqueous liquors. We have only to ſay a word more of the fixed ſalt of Tobacco, which poſſeſſes all its vertues: for, beſides that it is a mundifying skarifier, very gentle in being applied upon the drivelling foul fleſh of Ulcers, and upon the callous ſides which hinder cicatrizing; moreover, it gently moves the belly, if it be taken in Broths: it is alſo contrary to Worms, and all other corruptions generated in the bottom of the Stomack and the Entrails. It is alſo diuretick and diſopiling; removes all obſtructions in the parts adjacent to the Ventricle, chiefly thoſe of the Meſentery and Pancreas; it cleanſes all the impurities of the Womb, if inwardly taken; and if you place the party diſeaſed upon a cloſe ſtool, and perfume her under with leaves of Tobacco, yielding a ſteem in the way of a vaporous Bath, having boyled the Tobacco before in Urin and white Wine. The *doſis* of the Salt is from iiij. to xv. or xx. grains in decoctions or appropriated to the malady for which it ſhall be uſed.

But if the Artiſt will be at the trouble to make the *Cliſſus* or compound out of 3 principles of the Plant, which are the ſpirit or Mercury, the Oyl of Sulphur, and the Salt mixt together, in ſuch a proportion as we have already taught, and puts them to digeſt together, until the unſeparable union of them be made, it will be without compare a much more efficacious remedy, than any of the three principles ſeparated: but the *doſis* muſt be leſs by half proportion.

It may be, many will wonder, that I ſhould attribute ſo many, and ſo different vertues to the remedies extracted from Tobacco: but I doubt not their wonderful ceaſe, when they ſhall take the pains, to make reflexion upon the different uſes which it is put to when the Plant is but newly gathered, or even in dried leaves by the common people, and moſt Chyrurgions and Phyſitians: for, it is taken in ſmoke, in Maſticatory and Powder, to provoke Sneezing; whereof the effects are various, according to the various conſtitution of thoſe that uſe it: it inebriates ſome, it prevents drunkenneſs in others, cauſes vomiting, ſleeping, watching; to be ſhort, it ſeemeth, that this Plant (as in part it is true) hath ſome univerſal vertue, not to ſay divine: It is alſo to be conſidered, that there is ſome Chymical myſtery hidden under the the preparation of this leaf: for, though thoſe that prepare it, are not alwayes capable to give a reaſon of their proceeding, yet the Natural Philoſopher doth ever find much to Philoſophize upon; ſince there is an obſervation to be made in chuſing the great middle leafs, rejecting the undermoſt, and cutting off all the ſhoots growing in the ſides of the ſtalk of the Plant, with the buds or beginnings of the flowers, and cutting alſo the tops of the ſtalk, and all the ſmall leaves which grow on this and that ſide of the great ones, and of the ſtalk, to concentrate the ſpirituous & ſaline nouriſhment of the Plant, and preſerve it for the ſuſtenance and food of thoſe 10. or 12. great principal leafs, which grow above the middle. There is alſo a nicety of conſtellation, whoſe obſervation is very neceſſary to gather Tobacco, as well as to ſow it, if you intend to do ſomething with it more than the vulgar. The ſeed of Tobacco is dedicated to the ſigns of *Aquarius*, and of *Mars*. It is to be ſowed in the increaſe of the Moon in *April*, a little before the ſtepping of the Sun into the ſign of *Aries*; and that with great reaſon and prudence, becauſe it hath need of water and moderate heat in its beginning, which temper is ſcarce found in any other ſeaſon of the year. It is gathered in the decreaſe of the Moon in *Auguſt*, when the Sun is in *Leo*, which is a conſtellation of dignity, ſtrength, and vertue; and in a ſeaſon, which may by its heat digeſt, as is required, the ſuperfluous moiſture of the Tobacco-leaves. But, that which deſerves yet better our conſideration, is, that the leaves, buds, and growing flowers are not uſeleſs, but contrariwiſe are as a Balm, and a preparing and preſerving Liquor, without which the beſt conditioned leaves ſhould loſe their vigour, ſtrength and vertue, either by their too quick exſiccation, or their ſudden corruption and putrefaction. The juyce of theſe parts ſo gathered and cut, is extracted after they have been well beaten in a ſtony or woodden Mortar; then let them be boiled with ſweet *Spaniſh* Wine, called decocted Wine, or with Malmſey, until all be well and curiouſly skimmed; after which, add ſome Salt, until all the liquor hath acquired a taſte and ſaltiſhneſs near unto that of the brine of the Sea, and at laſt throw into it Aniſe and Ginger very finely powder'd; and let this Liquor reſt that it may depurate, and leave its feculency in the bottom of the Veſſel: this done, put it in Glaſſes very well ſtopt; otherwiſe, all the vertue thereof will fly away. With this Liquor are the Tobacco leaves to be ſeaſoned, when they are gathered: for, they uſe to be dipt one after another in a Bucket filled with this Liquor, made ſomething more than luke-warm; for, were it boyling, the vertue thereof would fly into the ayr, by reaſon of its volatility: and beſides, the too violent heat would bake the leaf dipped in it, and make it uſeleſs. After this, lay theſe leaves thus prepared one on the top of the other, and cover them of all ſides, that they may lay to digeſt and ferment in a manner, until the Liquor hath penetrated them in every part thereof, and that they begin to grow hot; then take one of theſe leaves, ſpread and expoſe to the light, to ſee whether it hath begun to change colour or no, which colour muſt be reddiſh, or inclining towards a ruſty red, and if you find it ſo, uncover quickly your Tobacco, ſeparate the leafs; ſow or joyn them together, and expoſe in a covered place, but open of all ſides, to the free paſſage of the Air, ſo ordered, as that it may always be ſhut up to the Sun and Rain, and, that ſo the leaves may temperately dry, until they be rolled up, or preſſed whole in Boxes well wrapt up in their own leaves, and ſome other covering about, to keep their ſubtile and volatile vertue from exhaling, which defect makes the Tobacco commonly call'd ſtale Tobacco, fit for nothing unleſs it be reſtored to ſome proportion of its ſtrength and vertue, by the decoction of ſome parcel of good Tobacco made in *Spaniſh* Wine; though ſome make uſe only of a little Beer, with a few Spices infuſed in it; and this is called, mended or reſtored Tobacco. I was the rather invited to deſcribe this Preparation, to ſhow the neceſſity of the choice in Tobacco for preparing of good remedies, & to give the more occaſion to admire the wonders ſhut up by the Creator's hand in this Plant, which is not applied to that lawful uſe and purpoſe for which his infinite goodneſs hath produced it, namely, for the recovery and preſervation of health; but to the contrary, is abuſed and turned to exceſſes, which do offend his Divine Majeſty, wound and ruine man's health, and ſpoils families and civil ſociety.

SECT. III.

Of Flowers.

AMongſt that great number of Flowers, which the Vegetable Family ſupplies us with, with ſo fair ſo pleaſant and ſo diverting a profuſion; Nature ſeems to have beſtowed no greater care upon any than the Roſe, which may in a manner be called *the Queen of Flowers*, as much for the beauty and pleaſingneſs of its colour and ſmell, as, becauſe it is that which amongſt all the Flowers, ſupplies both Phyſick and Pharmacy with the beſt imployment. For one of the Authors, which hath with more exactneſs examined all what Ancient and Modern Phyſicians hath drawn from the Roſe either ſingle or compoſite, reckons as much as 37 ſeveral operations which this noble Flower lends to their Art: which makes me wonder how the *Greeks* ſhould have been induced to give the name of Flower (ἄνθος in their larguage) to the Roſemary Flower by *Antonomaſie*, a kind of Rhetorical ſpeech, and, as it were, by excellency; ſince this Flower doth not furniſh ſo great a harveſt of Remedies as the Roſe doth. Notwithſtanding, as the Roſemary Flower is endowed as well as the Roſe with many excellent vertues, and is even more balſamick; we will make uſe of theſe two Flowers in the preſent Section, to teach Artiſts the manner of operating upon Flowers, that by the example of theſe two, they may proceed upon others of the like or approaching nature: For, as concerning other kinds of Flowers, we did ſufficiently inſinuate how they were to be wrought upon, when we ſpoke in general of Plants, in the beginning of the Chapter of Vegetables.

Of the Roſe, and of the ſeveral Chymical Preparations made by it.

BEfore we begin to ſpeak in particular of the ſeveral Operations which an Artiſt may make upon the Roſe, it is neceſſary we ſhould ſay ſomething of its differences, and the election which he is to make of them, to attain the propoſed end of his work: for Roſes differ in vertue according to the more or leſs of their colour, taſte and ſmell. For example, Province Roſes, or Red Roſes, are higher in colour then the reſt, of a more harſh and auſtere taſte, their ſubſtance more compact and leſs alterable then that of the other kinds, which argues a better proportioned mixture of their Salt and Sulphur, wherefore they are more cephalick and ſtomachal, as the Phyſicians upon this account uſe them rather then others for Conſerves and making of Vinegar: but chiefly to extract the tincture after they are dryed, as we will teach hereafter. The pale kind of Roſes, which are called common Roſes among the cultivated and garden kind, are of a more penetrating and ſubtile ſmell then the Province, abound more in juyce, and are ſooner faded and altered; in ſo much, that they can ſcarce be dryed; they have alſo a more ſaline and bitter taſte which is a token of their purging and looſening or colliquative quality, as appears by their effects: wherefore they are moſt uſed for Diſtillations, Syrups, and Honeys, by reaſon of their abounding Mercury, of their Sulphur and Salt preponderated by their moiſture, which renders them capable of a quick fermentation, and makes them eaſily to communicate their vertue, to ſuch ſubjects as do participate of any of the three principles abounding in them.

There is a third kind of Roſes, which are called Damask Roſes, or Musk Roſes, of a very fragrant ſmell, and much leſs violently affecting the brain, than the Pale Roſes, not making ſo ſtrong a colliquation, when they are uſed in purging, and leſs prejudicial to women ſubject to fits of the Mother; which is the reaſon they are preferred to others, in the preparation of purging Syrups either ſingle or compounded:

but as theſe Muſcat Roſes are not found every where, and for the moſt part, but in the hands of curious perſons which cultivate them, rather for the pleaſure of ſight and ſmell than Phyſical uſes ; it will be lawful to make uſe in their place of the Wild Roſes, which being gathered in due ſeaſon, will eaſily ſupply the effects of the other.

The fourth kind of Roſes employed by Phyſicians, are, the white Roſe, only uſed for the Eyes and Women, for the reaſons alledged already : we will not here waſte frivolouſly our time in making a deſcription of all the ordinary operations which the Roſe yields to Pharmacy : We ſhall only ſay, what we think to be neceſſary for inſtructing the Chymical Apothecary, to draw from this lovely Flower the pureſt and beſt part of it, without loſs of any of its vertues. But before we come to particulars, we muſt briefly indicate the time in which Roſes are to be gathered, that you may find in them the advantages which Nature hath placed. To this end, when the Artiſt intends to make any uſe of Roſes, he muſt cauſe them to be gathered a little after the break of day, when they have yet about themſelves ſome ſmall remains of the Balſamick moiſture, which the cool of the night did as it were gather and concentrate, both without and within theſe Flowers : above all things, care muſt be taken, that it ſhould not be after a Rainy-day ; but chiefly, when you intend them either for conſerve or drying : neither muſt they be gathered long after the riſing of the Sun ; becauſe, that Planet ſeems greedily to ſuck the Balſom and Nectar of all the Flowers which are of an ætherial and delicate ſubſtance : and amongſt all the reſt, Roſes are the moſt delicate ; therefore thoſe that intend to work upon them, muſt take their time opportunely, as we ſaid juſt now.

How to Extract the Tincture of Red Roſes.

HAving gathered your Red Roſes, commonly called Province Roſes, with the required care you muſt take of their white bottom, when they are not yet fully blown, but only pretty well advanced in their buds ; neither muſt they be of the double kind, but ſingle and ordinary Roſes ; you muſt, beſides, let them dry in the ſhade between two Papers, that nothing but ſuperfluous moiſture may exhale ; and, what ſhall be of odour and colour may be concentrated by a ſlow and moderate exſiccation : for, it is in that properly that conſiſts the vertue required by Phyſicians in the tincture of Roſes, which is thus made.

℞ ℥ i. of thus dryed Roſes, and put them in a Platter of Jug-mettal, or white Earth, pour upon it as much boiling water as is required to moiſten them, and when they are well ſoakt, pour upon it drop by drop, ſtill turning the Roſes, ℈ iv. of good Spirit of Vitriol, or as much as acid Spirit of Sulphur, or Spirit of Salt, according to the indication taken of the diſeaſe and remedy; after which, pour upon the whole ℔ iv. boiling water, and cover the Veſſel until the liquor be cooled, which run through a Flannel or Filter. There may be added to each pound of Tincture, if the Phyſician preſcribe it ſo, ℥ i. or ℥ ij. of Sugar; and in caſe it agrees with the Patients conſtitution. This Tincture is an excellent remedy to correct all defects of the Stomack, and chiefly, when out of order, by vomitings and lasks; when alſo digeſtion is depravated, and natural appetite to meat is defective; either by reaſon of ſome relaxation of the fibres of the Ventricle, or the dilation of its Membranes: above all, it is a ſpecifical remedy, in the diſeaſe called *Colera morbus*, or voiding of the Stomack both ways, provided the Patient drink it by very great draughts: for, the Balſamical vertue of the Roſe, aſſiſted by the Stomachical acidity of Vitriol, Sulphur or Salt, doth admirably ſettle again all the agitations and tempeſts of choler, and turns them to a gentle and pleaſing calm: It is alſo a very pleaſing and uſeful drink in all hot Feavers, either continual or intermittent: for, for the moſt part, theſe Feavers do proceed of ſome corruption generated in the Stomack, which hath produced an alteration in the ferment of digeſtion, which never fails to introduce the malignity of the conceived Ideas in the food of the Patient, and continually carrys this venom, and conveys it in the Veins and Arteries, which cauſes the differency of Spirits, followed by the Feaver and its redoubled fits. Now as this maxim in Phyſick and Philoſophy is very true, that *Sublata cauſa tollitur effectus*, the cauſe being removed, the effect muſt ceaſe; and theſe Feavers in their beginnings, are nothing elſe but the products and ſequels of the corruption made in the Ventricle; it follows of neceſſity, that this cauſe being taken away, ſo muſt of neceſſity ceaſe the Feaver, which was only an effect thereof. And, as we have ſaid heretofore, That the tincture of Roſes did ſettle again the Stomack and its functions in their duty; ſo muſt the ordinary drink be made thereof, which Patients troubled with that kind of Feaver are to take.

This drink alſo is of no leſs efficacy againſt Dyſentery, Lientery, and generally, all kind of Lasks, which do cauſe in the Patient a very importunate thirſt and drought of mouth, which this tincture immediately allays, and, as it were, miraculouſly quenches.

The manner of Extracting the Water, Oyl, Spirit and Salt of Roſes.

WE will not repeat here, the reaſon why we do take the pale or common Roſes, nor the time fitteſt for gathering them, having already ſpoken thereof in the beginning of this Section. Let us only ſay, how the Chymical Apothecary is to proceed, in drawing the vertues contained in the ſame. And to begin:

℞ ℔ viij. of pale Roſes, and pick them, ſeparating the leaves from their ſtalks, which nevertheleſs, muſt not be thrown away, as is the common practice: but, contrariwiſe, left with the Roſes, becauſe, that yellow ſubſtance which is in the midſt of the Flower, contains a material Oil, which in the diſtillation aſcends in the form of Butter ſwiming on the top of the water, drawing to its ſelf the ſubtile and ætherial Oil of the leaves of the Roſe, and fixing it; ſo, that thus proceeding, the Artiſt will find the double or treble part more of Oil than otherwiſe: put the Roſes in a Body, whereof the Head, and Pipe or Worm paſſing through the Fat of Water to cool the aſcending Spirits, be made of Tin, or at leaſt of Copper newly Tinned: becauſe otherwiſe, the Oil would draw the taſte and greeniſh colour of the Copper, by reaſon of its volatile Salt very penetrating and very active. Pour upon the Roſes, which ought not by any means to be bruiſed, the fourth part of Rain-water, if it be poſſible, or of River water; then diſtil in the manner often already mentioned, Ceaſe not your fire until you perceive by the ſight, taſte and ſmell, that the water iſſuing participates no more of Oil, being inſipid and without ſmell; and when you perceive it to be ſo, open the Body of your Still, and empty it in a Cask whereof the Lye hath been newly taken away, and begin your diſtillation with new Roſes, that you may not interrupt and loſe the heat of your Furnace; and continue this operation until you have a ſufficient ſtore of Oil to do therewith, what we ſhall hereafter declare. And when you have gathered all your diſtilled Waters in a great large Glaſs Veſſel, let them reſt together, that the Oil may gather on the top, and ſo be drawn with a Silver Spoon: or, to proceed yet better, ſtrain all your Waters through a Linnen, ſpread over a * ſquare frame, and all the Oil will remain upon the Linnen, which muſt be preſerved in a very well ſtopt Bottle, by reaſon of the ſubtilty and activity of its parts. If you will preſerve your Water as it is, you may, for it is good; but, you may nevertheleſs, make it better, and much more

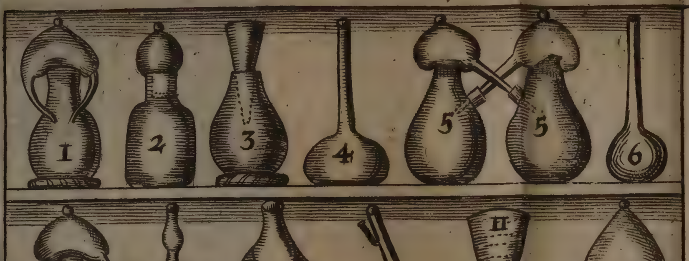
* Stencarke.

active, and efficacious, if you cohobate it twice over ℔ viij. of Roſes bruiſed in a Marble Mortar. And, if you demand the reaſon why we have ſaid above, that they were to be left whole, and now we ſay, they ought to be bruiſed in a Mortar; the anſwer is, That in the firſt diſtillation, we had no further intention then to extract the Oil, without caring much for the goodneſs of the Water; and, that as the Artiſt muſt know, the Oil is confounded with the Salt and Spirit, by the mixture and contuſion made in the Mortar, which would hinder it to aſcend and be freed by the action of the fire in diſtilling, becauſe the Spirit and Salt do inviſibly keep it amongſt themſelves in the Water: upon which is grounded our preſcription to bruiſe the Roſes in the ſecond diſtillation, intended only for the meliorating the Water, and communicating unto it a greater vertue.

We return now to the remainder of our diſtillation left in the Cask; which muſt be ſtrained through a coorſe Linnen Strainer, and the Cake left muſt be dryed, and calcined, to extract the Salt thereof in the manner above related when we ſpoke of the fixed Salt of Vegetables. But, as we will put the liquor come forth in the ſtraining to ferment with new Roſes; it might be asked, why we have ordered the diſtilled Roſes to be ſtrained before fermentation; and this queſtion, being not without good grounds, muſt be anſwered and ſatisfied with pertinent reaſons; by which it may appear, that we have not ſaid it without very good grounds, and an abſolute neceſſity: for had the ſubſtance of the Roſes been fermented, the fixed Salt which is in them ſhould have been diſſolved by the action of fermenting, and ſo volatilized, that all this ſaline ſubſtance ſhould have been converted into Spirit, whereas the firſt diſtillation did extend no further (neither was intended) then to extract the ætherial Oyl, and a portion of volatile Salt of the Flower. You muſt then moderately warm that which hath been ſtrained, and put it to ferment with xx. or xxx. ℔. of new whole Roſes, with either Yeſt or Leaven, obſerving all the requiſites, and neceſſary precautions in this operation, which are ſufficiently delivered in the beginning of this Chapter, to which we ſend back our Artiſt; as alſo for what concerns diſtillation and rectification of the Spirit to be extracted.

The way of preparing the true Eſſence of Roſes.

THe example we are now to give, is not one of the leaſt myſteries of Chymiſtry, wherefore we will deliver it with all poſſible exactneſs, that the Artiſt may make uſe of it with delight and advantage. To this end, take ℥iv. of Salt of Roſes, and put them in a ſmall Cucurbit, and pour upon ℔ ß. of the beſt Spirit of Roſes: then apply a Head to your Cucurbit, and lute exactly the Joynts thereof, and draw off the Spirit in the ſlow heat of *B. M.* that it may become alkoholiſated, that is to ſay, well dephlegmed; for then nothing but the pure and meer ætherial ſubſtance will aſcend, and the Salt keep all the Phlegmatick part. But this ſubtiliating of the Spirit is not yet ſufficient; for, it is required beſides, that this Spirit be impregnated with the pureſt and ſubtileſt portion of the fixed Salt upon which it was diſtilled, and this is that Spirit which Chymiſts do call alkalizated, as if they ſhould ſay, a Spirit participating of the Salt *Alkali* of its Plant; a name given by the *Arabians* to all kinds of Salts extracted from Vegetables or their parts, by the help of calcination and elixiviation. Put then the Salt remaining after the alkoholized Spirit in a Crucible, and dry it by moderate degrees to the fire, until it grows red; and above all, take great care that it ſhould not melt, and when it is moderately cooled, put it in the Cucurbit, and the ſpirit being poured upon it, diſtil as at firſt; and ſo continue and re-iterate three times, drying the Salt, and diſtilling the Spirit, to acuate it, and furniſh it with a ſufficient portion of its own Salt, which will be an uniting mean to joyn and mix them indiviſibly together, and to frame thereof an admirable Eſſence, as much for its ſweetneſs and perfume as for its medicinal vertues, which do far tranſcend all other operations of Vegetables. Now the chief of all this myſtery, is, the Alkaliſation of the Spirit; wherefore the Artiſt muſt have a very exact regard, to make it with all requiſite punctuality. To make the mixture of theſe two bodies with a requiſite proportion, you muſt put one part of the ætherial moſt pure and moſt ſubtile Oil, and pour upon it three parts of the alkalized Spirit, and you ſhall ſee them inſtantly unite together in a wonderful manner; and ſo ſhall you have an Eſſence fit to be mixed to all kind of liquors, which infinitely recreates the ſenſes by its pleaſant ſmell. And if you joyn to it the Eſſence of good Ambergrice, and Limon Rind it will prove a Cordial and Cephalick remedy, not to be parallel'd by any other, as much for the excellency



1. a Pellicon or Circulating veſſel.
2. another veſſel of Circulation.
3. an infernall glaſs.
4. a Matrace or boult head with a flat bottom.
5.5. a twin or double pellicon.
6. a Matrace or boult head.
7. an alimbeck made of one peece or a head and body joyned at the firſt making.
8. the Phyloſophers egg.
9. a double egg or one within another.
10. a little Matrace.
11. a Seperating glaſs.
12. a blind head or a head without a beake.
13. a receivour.
14. a glaſs funnell.
15. a Cornue or a Retort.
16. a Cucurbit or a body for an alimbeck.
17. a ring or round roule of Straw to hould glaſs veſſels.

The Furnace and veſsels to diſtill Vigitables.

a. the body of the furnace.
b. the place for aſhes to fall into.
c. the doore where fire is to be made.
d. a plate of Iron to containe Sand or ſifted aſhes.
e. the ſpace or roome to be fild with Sand.
f. a Copper veſſel or body tind over.
g. a head allſo of copper tind or made of tin.
h. the receivers.
i. the ſtooles that hould vp the receivers.
k. a pullie and cord to lift vp the head by.
l. the regiſters or vent holes of the furnace.

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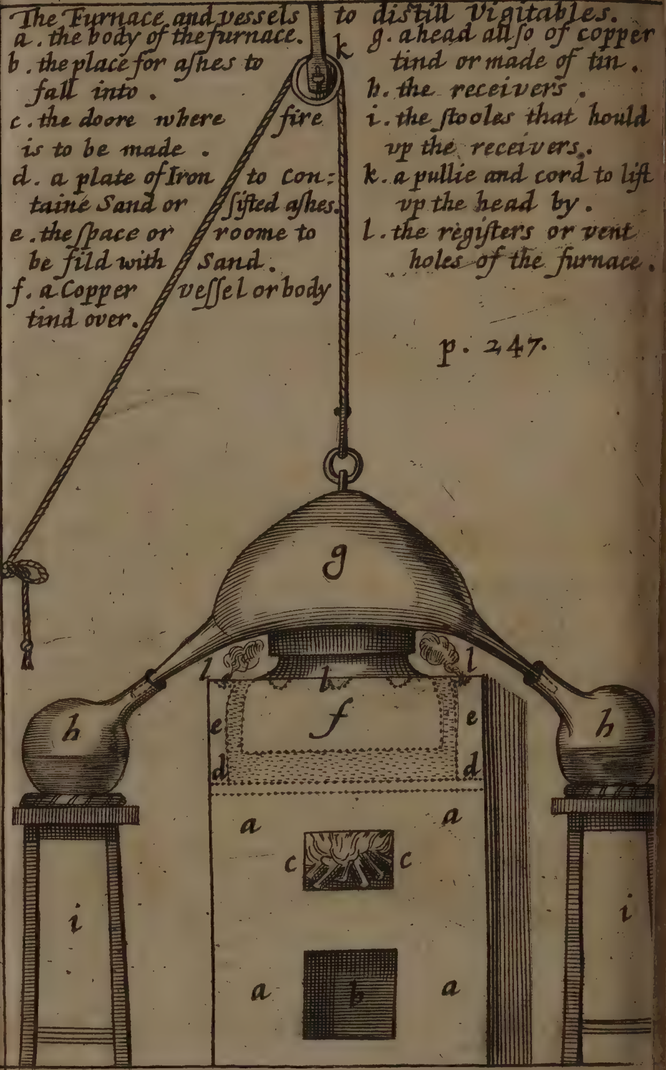

of its ſmell, as for the ſubtile and efficacious vertues of the ingredients which compoſe the ſame, and are very penetrating, capable of raiſing up again the Spirits dulled and extenuated, by ſoporiferous and lethargick affections, which moſt commonly ſtrike to the Brain, and benum its affections; as alſo it is of great vertue in all failings of the Spirits and paſſions of the Heart; whether this Eſſence be given in Broth, Wine, or Cordial Water, or even any drops be let down between the teeth if they be cloſed, and thruſted with a Feather or a little Cotton in the Noſtrils: The ordinary *doſis* of theſe Eſſences is from ij. to vi. drops viij. or x. in any of the afore mentioned Vehicles.

In this very manner may be prepared all the Eſſences of ſuch Vegetables, as yield an ætherial Oil, and may be fermented to extract the Spirit; whether thoſe Plants be odoriferous or no. For thoſe which we do not like for the ſmell, have notwithſtanding their profitable uſes, and ſpecifical vertues, for ſome part or other of the humane body. But, as there are ſome ſubſtances extracted from Vegetables or ſome other bodies, which do yield notwithſtanding Oils of very great vertue but would afford much more, were they converted into eſſences, as are Gums, Roſins, and yellow Amber; we will ſay here only in few words, that alkalized Spirit of Wine may be made uſe of to eſſencificate them, or the Spirit of ſome other Plant which may have a correſpondency with the Diſeaſe or affected part. And this ſhall ſuffice for the Roſe. We come now to the Roſemary, which may be uſed in the ſame manner, and according to the ſame directions, and ſo have we no more to add here, but only the manner of preparing the Water, called of S. *Elizabeth*, or *Iſabelle*, Queen of *Hungary*, which is in truth a worthy noble remedy.

To make the Queen of Hungary's *Water with the Flowers of Roſemary.*

℞ ℥ xx. of Roſemary Flowers, gathered a little after the riſing of the Sun, put them in a double Veſſel, and pour on them ℥ xxx. of alkoholized Spirit of Wine; lute exactly the Joynts where they meet, and put in digeſtion to extract in a very ſlow heat of the vaporous Bath, during three natural days: let the Veſſel cool before you open it; after that, draw the Tincture and ſtrain the Flowers: filtrate and keep by it ſelf one part of this Balſamick Tincture, to uſe both internally and externally; for it hath as much if not more vertue than the Water, but is not ſo pleaſant nor ſubtile. You muſt diſtil the other part in *B. M.* in a heat ſo well graduated, that the heat of the Limbeck may not contract any heat at all, and that the Artiſt may diſtinctly reckon two or three, between the falling of each drop, and ſo continue till you have reduced the Tincture to the conſiſtency of an Extract. You muſt exactly ſtop the Bottle in which you put this Water, becauſe it is extraordinarily ſubtile. *Zapata*, an *Italian*, both Phyſician and Chyrurgeon, doth attribute to the remedies extracted from Roſemary almoſt innumerable vertues, and that with much reaſon; for, this Plant is full of volatile Salt and Sulphur, two of the chiefeſt agents of Nature: but chiefly, when their vertue is animated by the ſubtilty of the Spirit of Wine, which doth in a moment penetrate from the center of the Stomack to the circumference of the Body, and doth inſpire a new vigour into all the functions of our life. All the vertues of this Balſamick Tincture Water and Extract, can ſcarce be worthily enough deſcribed and magnified. For, what I beſeech you, can be more wondered at and magnified, then the reſtoring of the Queen of *Hungary*, by the help of this Water, when ſhe was ſick with Palſie and Gowt, and grown ſo decay'd, that ſhe had no motion of the body free from impediment, and that, being 72 years of age; and yet this ſubtile and balſamick Spirit proved to have ſo noble irradiating a vertue, that ſhe was reſtored to a very great degree of health and vigour; inſomuch, that ſhe did not appear to have been above five and twenty years old: and the King of *Poland*, taken with her beauty and youthfulneſs, courted her to his wife. This is a remarkable effect of this remedy as to the internal vertue, which we ow to the faith of Hiſtory: But I muſt alſo relate here another external cure, to prove more and more the noble and excellent vertue of this Water, by what happened to a Serving-Maid in my own houſe; which by falling upon the hindg of a Door, had received a great bruiſe in the Fore head; and having on a ſudden repercuted the tumor raiſed in the place, by binding hard upon it Linnen dipt in fair Water, with a piece of Gold put upon it, took away all outward ſign of any hurt; but the accidents which followed a little after, made it ſufficiently appear, that there was bloud ſhed under the *Pericranium*: for ſhe ſoon after grew heavy and ſleepy, did ſtagger as Drunkards uſe to do, and ſpoke nothing but idly without feeling, with all this, any ſharp pain, and leaving any outward token of her Diſeaſe, which occaſioned me to apply a croſs-folded Linnen dipt in this Water of the Queen of *Hungary* upon the place where ſhe had received the contuſion, and to make her take a good ſpoonful of it inwardly, which did put her in a ſlumber, or rather ſleep for the ſpace of one hour; and when ſhe awoke again, ſhe ſaid, ſhe found her ſelf cured, and immediately walked and recovered her perfect ſenſes: but, that by which her Cure did much better appear to be true, was, that all her Fore-head, Noſe, and the parts about the Eyes, did appear of a colour as of Marbled Paper; becauſe, the bloud which had ſetled under the skul or *Pericranium*, and did cauſe all the former accidents, had been digeſted, and as it were diſſolved, by the ſubtle and penetrating vertue of this admirable Water: ſo, that after this, ſhe needed no more but the application of a ſecond folded Linnen, which perfected the cure, without ever any accident ſince. I have yet many other Experiments and Obſervations made of the noble Effects of this Water: but, it ſuffices to have ſpoken generally of the vertues and *doſis* of the Tincture, Water, and Extract. They are in truth ſpecifical Remedies, and chiefly dedicated to the Brain, Womb, and all diſeaſes incident unto it; as Apoplexy, Palſie, Epilepſie, Vertigo's, and other like Diſeaſes. They ſtrengthen the ſight, and do correct the ill ſavour of breath, corroborate the Stomack, remove the obſtructions of Liver, Spleen, and the Mother; are wonderful againſt Jaundiſe, and a ſure Remedy againſt the Whites; finally, cheriſhes the Heart and all its functions, repairs decayed Memory, and preſerves in an equal ſtate and vigour both internal and external Senſes, either inwardly taken, or outwardly applied. The *doſis* of the Tincture and the Water, is from ℈ j. to ℈ iiij. in white Wine, Broths, or ſome other appropriated Liquor to the diſeaſe. But you muſt note, that in caſe you exhibit theſe Remedies in Broth, you muſt expect to mix them, until the Broth be of a temperate heat to be taken, otherwiſe all the vertue will be loſt and vapour away, by reaſon of its too great ſubtilty. The *doſis* of the Extract is from ℈ ß. to ℈ j. either alone or mixt with ſome Conſerve, or diſſolved in white Wine, or ſome diſtilled Water. This Remedy is ſo neceſſary by reaſon of the accidents happening every moment in a family, as hurting, burning, over-wearineſs, and colds, that it would be almoſt neceſſary to have it ſtill at hand, to prevent by a ready help and ſure aſſiſtance, the evil conſequences and great griefs which ordinarily follow the beginning of theſe Diſeaſes. *Principiis obſta: ſero medicina paratur, Dum mala per longas invaluere moras.*

SECT. IV.

Of Fruits.

Fruits are that part of Vegetables which are leſs regarded and made uſe of in Chymical Pharmacy: wherefore, we ſhall have little to ſay concerning their preparation. Since we find *Colloquint* only worth our taking notice, and beſtowing of our pains. And, as it is Purgative often uſed, and in whoſe correction hitherto much error is committed; we ſhall ſet forth only here what Reaſon and Experience have taught us upon that ſubject.

Though the moſt famous Chymical Authors have preſcribed to make the Extract of Coloquint with Spirit of Wine, yet do I differ from them in judgement in this particular. Becauſe the Fruit of Coloquints is volatile, and hath a ſubtile and dangerous Salt in it ſelf, which cauſes ſtrange colliquations, and corrodes the Stomack and Guts, as it plainly appears, when this unſafe remedy hath cauſed any hyper-catharrs or over-purgings. Now the Spirit of Wine draws from the ſubſtance of the Coloquint, nothing elſe but the volatile and hurtfull Salt, without touching the fixt part at all, which is that that truly purges the ſeroſities, clammy ſubſtances and mucoſities of the body: Moreover, the Spirit of Wine doth ſubtilize and attenuate the body of the Coloquint, that it carries it into the very Veins and Arteries, whence it attracts the beſt and pureſt part of the bloud. The Artiſt then muſt find out ſome way to correct and extract this purging Fruit, that it may yield its faculty very conducing to that end, without any hurt or danger. But it muſt be performed by a *Menſtruum*, differing in nature from Spirit of Wine, that it may fix in ſome manner the malignant volatility, which predominates in this Fruit, and cauſes all its ill effects; wherefore the corrective and *Menſtruum* of Coloquint, muſt of neceſſity be diſtilled Vinegar, provided, it be aſſiſted and animated with a fixt penetrating and ſubtile Salt, which may act upon this volatile part, and alter its nature: this Salt is that of Tartar, according to *Sennertus* his preparation, as we will teach when we come to teach the Operations upon Tartar. For we regard very little here, the pretended correction of ancient and new Diſpenſatories, which reſt only in the pulveriſation and mixture of Aromatical ſubſtances and Gum Dragant, to hinder the dangerous effects of Coloquint. The manner then of the true Extract is this.

How

How to prepare truly the Extract of Coloquints.

℞ Coloquint of the whiteſt and lighteſt you can find, ſeparate the Seed contained in the pulp or fleſh of the dryed Coloquint, becauſe ſome are afraid of its violent operation: But, becauſe it can proceed from no other cauſe, but its volatile ſulphureous Salt, in which conſiſts all the venemous and hurtful quality; and, that we teach here, how to fix and correct it; we ſhall alſo take the half of the Seed to the double of the Pulp to make our Extract; reduce all to groſs Powder, which powr in the Matraſs, and imbibe by little and little with good diſtilled Vinegar, impregnated with ℥ ß. of the prepared Tartar, according to *Sennertus* way for every pound of Vinegar, and when all is well ſoakt, pour over of the ſame Vinegar about four fingers height, and put it to digeſt in Aſhes to a moderate heat the ſpace of eight dayes, agitating and ſtirring the Glaſs 3 or 4 times every day at the leaſt; obſerving alſo, that your Veſſel be not filled above half, becauſe this Fruit having been much contracted in the former drying of it, when it comes to reſume its ordinary bulk in the *Menſtruum*, it ſwelleth extraordinarily, and ſo might endanger the breaking of the Veſſel, and loſs of the ſubſtance and labour, when you ſhould leaſt think of it; having then laid it thus 8 dayes, ſtrain and percolate the liquor, and put the Cake again in new digeſtion as before. The liquor you muſt only filtrate through a Linnen; and, if there remains any ſubſtance of the Body, joyn it again to the new digeſtion, and re-iterate three times the operation of ſtraining, percolating, filtrating and digeſting in embers, and, ſo ſhall you be ſure to have extracteed and corrected all what what was good and bad in the Coloquint: Evaporate after this, all your Digeſtions to a conſiſtency of Extract; whereof keep one half, to exhibit with ſome good Mercurial Preparation in Venerous diſeaſes; as alſo in Dropſies, and Arthritical Diſeaſes, provided, your Patient be of a ſtrong and robuſt conſtitution: The *doſis* is, from grain ij to ℈ ß. and a whole ℈. If it be exhibited without Mercury, you muſt preſcribe after it a ſmal draught of Malmſy, *Spaniſh* wine, ſtrong Mead, or ſome other good generous wine; or give it in the ſame. But if there be any Mercury incorporated with the Extract, you muſt preſcribe a ſmall Broth after, wherein you have mixt x grains of Coral, & as much of powdered Mace. But in caſe you deſire to give the Extract of Coloquint in a larger *doſis*, and without any danger of doing hurt; you muſt purſue and compleat the due preparation of this Extract: Put it then in a Matraſs, and to each dragm of the ſame add ℈ j. of ſoluble Magiſtery of Coral, and circulate it one whole Moneth in a Matraſs doubled, or Pellican well luted; having firſt powred upon it Spirit of tartarized Wine to the eminency of four fingers; the circulation muſt be performed in a ſlow heat of *B. M.* And when it is ended, all muſt be poured in a Glaſs Cucurbit, adding to it the weight of ʒ j. of Nutmeg-Oyl made by expreſſion, well mixt and united with ʒ ij. of Sugar in Powder; put this Cucurbite in *B. M.* and draw off the Spirit of Wine by diſtillation, and when no more Spirit aſcends, encreaſe a little the fire, and evaporate all this mixture to the conſiſtency of an Extract, which may be made in Pills: ſo ſhall you have a purging Extract perfectly corrected, and of ſafe uſe in all caſes where Coloquint is wont to be recommended by Phyſical Authors: but chiefly in all diſeaſes of the Brain, Nerves, Joynts, and Lungs: and, therefore no ſcruple is to be made in exhibiting this Extract or Magiſtery ſo prepared to perſons affected with either Apoplexy, Epilepſie, Vertigo's or ſwimming of the Head, but chiefly, in accidents of Venerial diſeaſes: The *doſis* is from vj. grains to ℈ j. and ʒ ß. in the Pap of a roaſted Apple, or ſome pleaſing Jelly: It might alſo be diſſolved in Spaniſh Wine; but it may contract an ungrateful bitterneſs, therefore ſome ſuch vinous Liquors or Broths are rather to be taken after, according to the conſtitution of the Patient, and the nature of the diſeaſe. But, as thoſe which apply themſelves to Chymical Phyſick, and conſequently to the Reading of Authors treating thereof, ſhall find in *Rullandus*, and ſeveral others, mention made of a Specifical Spirit againſt ſeveral obſtinate diſeaſes, to whom the name of *Spiritus vitæ aureus Rullandi* is attributed, and yet the deſcription thereof is not to be found in the Author it ſelf, and what others do deliver of it, is but conjectural: I have thought it neceſſary to eaſe the mind of Artiſts upon this matter, to joyn my own opinion to that of others for their ſatisfaction. They that maintain this Spirit to be made out of Coloquint, ſay, that one of the conditions of it was to purge without Vomit: and that, by conſequence, this Remedy could not proceed, but from this fruit, which is the only Vegetable purging with ſo ſmall a *doſis*, and chiefly being exalted by the help of Spirit of Wine: for, had this Medicine been both Purging and Vomiting at once, they would have all attributed its vertue to ſome Antimonial Preparation; but as it is not Emetick, the moſt judicious have believed, that it was Spirit of Wine impregnated by a long digeſtion and Circulation with the vertue of Trochisks Alhandal, which are nothing elſe but prepared Coloquint. Others do maintain the contrary, amongſt whom *Franciſcus Antonius* a *London* Phyſitian, is none of the leaſt conſiderable: for, they will have it to be a preparation of Potable Gold, or ſome other tincture extracted from this noble metal; and alleadge for their reaſon, that Colcquint being a Vegetable cannot extend ſo far its vertue, as are thoſe attributed by *Rullandus* to this his Preparation in the Centuries of his Obſervations; and, that none but a Mineral Remedy, or Metallick one, can be capable of this Univerſality of action: and moreover, that it is not without reaſon or myſtery, that this Author gives unto it the name of Golden Spirit of Life, or *ſpiritus Vitæ de auratus*: ſeeming to be willing by this denomination, to inſinuate what he would have concealed in his Writings. Though it ſeems that the reaſons alleadged of both ſides are valuable; yet I am forced to ſubſcribe to the firſt opinion, which holds for Coloquint; becauſe I am informed by ſeveral very ancient and creditable Phyſitians, who profeſs to have it from young *Rullandus*, that the Spirit which his Father uſed, and whereof he relates the Hiſtories in his Centuries, was nothing elſe but the Tincture of Trochisks Alhandal: But, that the time, *Menſtruum*, weight of the Trochisks, and their Preparation, was to be obſerved; and as this Remedy is full of many noble vertues, I have thought my ſelf obliged to ſet it here, though it be not ſo well corrected as the laſt Extract, whereof we have given the deſcription, ſince the acid and fixative Spirit hath not been uſed, but for the Preparation of Trochisks; and, that the Salt which did accompany it was an Alkali, which deads and blunts the malignant action of the volatile Salt of Coloquint; it is nevertheleſs to be conſidered, that the *Menſtruum* uſed in the preparation of the *Spiritus vitæ de auratus* is impregnated with the pureſt parts of this Salt Alkali, ſince it muſt be the Spirit of Wine Alkalized, which ſhall extract the Trochisks Alhandal, and that by conſequence it ſhall correct the malignity thereof, by the help of this Salt, and the long re-iterated digeſtion: which is thus performed.

The manner of Preparing the Spiritus vitæ aureus, Rullandi.

THe Golden Spirit of Life of *Rullandus*. ℞ very white and light Coloquint, cleanſe it exactly from all its ſeed, and ſhred and cut it as ſmall as you can with Cizzars; then reduce it to Powder, having firſt anointed your Peſtle with expreſſed Oyl of Nutmeg, or Oyl of Maſtick drawn by diſtillation; ſearce the Powder, and with good diſtilled Vinegar, reduce it to a Paſte in a Mortar; then frame this Paſte into Pills, or Trochisks, having firſt anointed your hands with the ſaid Oyls; dry theſe Trochisks or Pellets in the ſhade, between two Papers, and reduce them to powder again: and beat them the ſecond time in a Mortar with the ſame *Menſtruum* of Vinegar; frame your Pills or Trochisks, and dry them, and ſo re-iterate the third time; and, thus ſhall you have your *Trochisks Alhandal* fit for all uſes and appoſitions, and much ſafer than thoſe that are prepared after the old way with the mucilage of Gum-dragant.

℞ ℥ j. of theſe Trochisks reduced to very ſubtile Powder, and put them in a circulatory Veſſel, or a double Veſſel (*de encontre*,) pour upon it ℔ j. alkalized Spirit of Wine; ſtop exactly the joynts of the Veſſels, and expoſe your matter to digeſt and extract, to the reverberation of the Suns rays during the ſpace of 15 dayes; this time ended, open the Veſſel, and add ℥ ß. of theſe Trochisks in Powder, then ſtop it, and put it again as long a time in digeſtion; open your Veſſel again, and add for the third and laſt time ʒ ij. of the ſame Trochisks reduced to powder, and continue the ſame digeſtion for 15 days more. This ended, ſtrain or percolate the liquor, and ſqueez the remaining matter, then filtrate the Tincture by a Paper, and you ſhall have the Golden Spirit of Life of *Rullandus*, in its perfection, which you may make uſe of in ſuch caſes and diſeaſes as you ſhall find related in his Centuries, or in all other diſeaſes wherein we have already ſaid, that the Extract was uſeful and conducing. The *doſis* is from ʒ j. to ʒ vj. and even to ℥ j. if it be uſed in liquor: but, if you draw back the Spirit of Wine, and reduce this Liquor to an Extract: the *doſis* then muſt be from vj. grains to xxiv.

We could have added to this Section of Fruits ſeveral other Operations drawn from theſe Mixts, as the burning Spirit of Pears or Apples, and ſeveral other Fruits of this Nature: but as no body is ignorant that the juyces of theſe Fruits will ferment of themſelves; and that Art contributes no more to it than the bare diſtillation, to draw the Spirit thereof: I have thought it unneceſſary to deliver particularly the manner of it here, ſince we ſhall furniſh a ſufficient example, when we come to teach of the Anatomy of Wine, in the Section of Juyces. It ſeems alſo, that we ſhould have been obliged, to declare in this Section, how the burning Spirits of Elder-Berries and Dane-wort, of black-Cherries, Straw-berries, Raſpeſes, Gooſ-berries, and other like fruits ſhould be made: But, as we reſerve the example of their fermentations, where we ſhall ſpeak of Juniper-berries, we refer to deliver our ſelves more fully to the Artiſt there. There is only a warning to be given concerning theſe fruits, that the Juniper-berries are to be diſtilled before fermentation, becauſe they have in themſelves great ſtore of ætherial Oyl, which muſt be extracted before they ferment; but, that as theſe other fruits are only juycy and without any portion of Oyl, unleſs it be that which is concentrated in their Seed, ſo is it not neceſſary to diſtil them before fermentation.

SECT. V.

Of Seeds, or Berries and their Seeds.

WE have already given a general Idea of the Compoſition of Seeds, and their difference, when we did treat of Vegetables in general; we have alſo inſinuated, as it were, the manner of diſtilling them, to extract their vertue; but, as we know by our own experience, that theſe general Maxims do not enough deſign the work; we muſt particulariſe the Operations, according to the diviſion we ſhall make of this univerſal genus in four other ſubalternate kinds, which will be, The inſipid and inodorous Seeds; the odoriferous and aromatical; the inodorous, but of a ſubtile and biting taſte; and finally, thoſe which have ſcarſe any ſmell, unleſs they be rubb'd or ſqueez'd, and are endowed with a Honey-taſte, mixt with ſome Balſamick and Aromatical ſavor. For the firſt, we ſhall take the Wheat, Rye, and Barley, to make their Anatomy, and Extract out of them the true *Aqua-vitæ*: For the ſecond, we ſhall take the Seeds of Aniſe, Fennel, and Parſley, from whom we ſhall extract a ſpirituous Water, and ætherial Oyl: For the third, we will take the Muſtard-ſeed, or Garden-Creſſes, which we put into fermentation to diſtil thereof a volatile Spirit, and which we will diſtil alſo without addition by Retort, to extract the volatile Salt, the groſs Oyl, and the acid byting and mercurial Spirit: For the fourth, we will take Juniper-berries, whereof we will prepare ſeveral differing Remedies, and very uſeful to Phyſick and Pharmacy,

I doubt not, but many will think it to be a very common theam to inſert here the Anatomy of Wheat, or Corn, Rye and Barley; becauſe as theſe Seeds are very common, it would ſeem I ſhould bring in ſome more rare ſubjects for my purpoſe: but let them ſeriouſly conſider, and make a due reflexion upon their daily food, that they ſhould not be diſpleaſed to be taught, what portion of Spirit of Life is contained in the Bread they eat, and without the daily uſe of which they cannot be; and, though the vain babling of ſome, who pretending much to Philoſophy, and thinking to have ſearcht Nature throughly, make a great noiſe, and ſeem to be ſufficiently ſatisfied, with ſaying, That digeſtion is performed by the proper heat of the Stomack; without ſhowing in what manner this heat doth act upon the matters which it is to digeſt: that, beſides, this digeſtion produces a chyle as white as any Cream, without explaining at all by what means it is performed, and, that they infatuate by theſe empty words the minds of thoſe which apply themſelves to common Phyſick and its parts: It concerns our duty and publick ſafety, to give to underſtand, that all theſe defects do proceed only from the ignorance of Chymiſtry, which would have taught them as we are going to ſhow; That the fermentation artificially uſed in the Corn, is the ſame which the Stomack uſes in the Ventricle: and conſequently, the Chymical Artiſt may make a real and true demonſtration thereof, without any need of opening or anatomizing any living Animal to be ſurer of it. For we will give to underſtand, by the action of fermentation and the Spirit we ſhall extract thereof, that it is in vain to uſe ſo many words as there are daily made about heat and cold, and the firſt and ſecond qualities of Mixts; which are properly Chimera's filling the mind with unneceſſary terms, and dulling our natural light, diſcouraging many from the earneſt ſearch of Phyſical truths, to acquire thereby the knowledge of ſeveral noble Remedies, which would be profitable to the Members of Civil Society: This truth was illuſtrated two years ago in the Royal Garden eſtabliſhed for the culture of Medicinal Plants, and the Theorical Lectures of Chymiſtry, and demonſtration of its Operations, which I then was appointed to make by order of the Kings firſt Phyſitian *M. Vallot*: for, when I came to ſpeak of fermentation and its wonderful effects, and was about to prove the truth of my reaſonings by an operation which I made upon Seeds: the moſt part of the Auditors, which had been prepoſſeſſed with a doctrine relying only upon words, but void of effects, went away, as if what I ſaid then, and did demonſtrate, had been ſome trivial and too familiar a buſineſs: though none of them could underſtand or apprehend this manner of Philoſophy, neither conceive the great myſteries which Nature hath been pleaſed to reveal to us, when ſhe made obvious to our eyes natural fermentations, which ought to be our true model, to attain to the perfection of artificial ones; as we will make appear in the ſequel.

Of

Of Ferment and its Action, and how the Fermentation of Corn is to be performed; as alſo of Rye and Barley, to extract the burning Spirit thereof.

Although the art of baking Bread, and brewing Beer, ſeems for the preſent vile and abject; yet nevertheleſs, there be many learned perſons, and even of thoſe which will be accounted ſearchers of Nature, and vers't in her myſteries, that feed upon both, without ever having made a judicious reflexion, why theſe aliments do nouriſh and ſuſtain them, much leſs, what portion of them is converted into their ſubſtance for the preſerving of their life. Though ſuch a ſtudy ſhould be the chief imployment of thoſe that undertake to treat of Nature and its Products: and, as we have ſo often ſaid, that Chymiſtry only can introduce Man into Natures Cloſet and Sanctuary, there to diſcover her naked and hidden beauty; ſo will we endeavour to clear this truth, and explain it more eſſentially here than any where elſe. By the deſcription we intend to make of the Introduction of the Leven and Ferment in thoſe ſubſtances by which we are nouriſhed, which doth evidence and manifeſt unto us by its action, what portion of vital ſpirituous and celeſtial ſubſtance there is in the matters which are imployed daily by us for the preſervation of our life. Now we muſt of neceſſity have recourſe to the inventor of Leven, if we pretend to find its original any where elſe, than in the hand of God himſelf, and the nature of Light and Spirits; ſince the action of ferment is all divine; it is properly that fire of Heaven which ancient Poets have adumbrated in the theft of *Prometheus*, and which ſince hath been inſtrumental in the propagation of all Arts, ſince it is the only ſharpener of Spirits, which illuminates and guides them to the nobleſt knowledge. For if any do attribute the knowledge of Leven to Tradition, we muſt return to the firſt Inventor which can be no body elſe, but our firſt Parent, who had his knowledge by infuſion; and if we attribute it to Chance, it muſt of neceſſity follow, that the firſt diſcoverer ſhould have found by accident ſome fermented matter which ſhould have made him conceive, that the ſubſtance acting in this fermented body, did open and dilate it, and introduce in it ſeveral qualities by the alteration cauſed by the ferment, which occaſioned him to take notice of ſome new productions, and as a kind of new generation in the fermented ſubject. Now it is not poſſible for any man to have all theſe conſiderations, and make theſe reflexions, without a previous tincture, or acquired and adopted knowledge of natural Philoſophy: And ſo by the help of either of theſe two guides, he muſt have extricated by the help of the External Senſes, that which his Internal had preconceived, or, what is yet truer, his ſmell and taſte muſt have invited him to meditate thereupon, ſince there is no fermentation, without ſome ſpirituous ſubtile and penetrative odour, which ſuggeſts immediately to our reaſon this concluſion, that ſuch an effect cannot be produced, but by a celeſtial agent, and of an igneous nature; moreover, the taſte doth meet with a certain biting acidity, which is neither harſh nor corroſive: but, to the contrary, pleaſant and evincing clearly that there is ſome very ſubtile Spirit hidden therein: which muſt of neceſſity have obliged him who found out the firſt uſe of Leven, to make his Experiment of this fermented matter, with the mixture of ſome other that ſhould naturally incline to fermentation, and ſo came to diſcover the effect thereof, which ſince hath ſpread and communicated it ſelf to Poſterity. Neverthelſs, which way ſoever men came firſt to the knowledge of ferment and its action; we muſt refer the praiſe and glory of the invention to the Author of Nature, and the Creator of all natural productions; ſince thoſe that have applyed themſelves to ſeek its original, and the way of its operation have manifeſtly been convinced, that it had a ſource and original above Nature it ſelf, ſince all what the ſublimeſt wits have ever been capable to ſay of it, hath never been ſufficient to expreſs its Eſſence; they contenting themſelves only to ſay, That as God and his Attributes are the ſame thing, of which the humane mind can only conceive the exiſtency, and whereof alſo we can affirm nothing but by Negatives: ſo likewiſe, the deepeſt Philoſophers acknowledge Ferment and its action: but, they could never come to give an exact definition of what it is, and the manner of its action. For we find in holy Writ, that *Moſes* hath imployed no other term but Gods *fiat*, let the thing be, to expreſs the mind and will of God, which made, as it were, created things iſſue from Himſelf, as very well hath noted one of the moſt learned Phyſicians of our age, when he ſaith, *That God in the work of Creation, did in a manner open and explicate Himſelf as in a Book, in which he hath left his Picture drawn in moſt beautiful and viſible Characters; as if God had lodg'd and placed himſelf amongſt the Beings or created Subſtances; that they may the better partake of his goodneſs.* Now as the intention of the Creation was to cauſe a duration and perpetuity of created ſubſtances, by a long ſequel of generations; God placed the ferment or leven in the confuſed maſs of the Chaos, to introduce in it by his Omnipotency the Seeds of all ſublunary things, whereof he had the Idea's in himſelf from all Eternity. By which we know Ferment to be nothing elſe, but a ſpark of celeſtial and divine light, harbouring in all individual Subſtances, which nevertheleſs doth not appear to the Internal Senſes, much leſs to the External, and yet notwithſtanding doth work perpetually, and reduce all things from power into act, to convey them to the end of their natural predeſtination. We have no more at preſent to ſay upon this matter, but, that our ignorance cauſes here admiration; and, that we are forced to depart from contemplation, and ſtoop to action, according to the meaſure of knowledge which God hath permitted us, that is, to imitate, though a far off, and at a great diſtance the myſteries of natural fermentations by artificial ones.

To attain then to the perfect way of this noble operation, you muſt prepare a portion of the Seed which you are to ferment, that it may entirely be diſpoſed to receive the ferment; and, be capable beſides, to introduce it in a great quantity of the like unprepared Seed, which is thus performed. Chuſe the time of the Vernal Equinox for this preparation; becauſe, then Nature is in a kind of motion, to make all things bud and germinate in the renewing of the year: wherefore ſhe makes uſe to this end of all the aſtrations or influences of the Stars; which by means of the vernal Rain, impregnated with a very ſubtile and efficacious Spirit and Salt, which renders it penetrative and permeable, more than at any other time of the year, doth fœcundate the Earth. Take then ℔ L. of Wheat, Rye, or Barley, and put it to ſoak in a woodden Tub in Rain-Water gathered in the Vernal Equinox; or, if the ſeaſon will not afford it, in good River-water; let there be no more water then what is ſufficient to ſoak well your Grain, and leave it ſo during 24 hours, then let the water run away, by a hole which is to be under the Tub; after which, take away your Grain from the Tub, and put it in an aired place, but not expoſed to winds; make an heap thereof of the height of one foot and an half; cover it with a Linnen cloth firſt, and a Woollen one thereupon, and ſo let it lye together and ſoftly contract a heat, until you find that the Grain hath begun to germinate, or bud and ſhoot out a ſmall filament white and very thin, as if it were white Silk; then uncover your grain, becauſe, that filament witneſſes that the heat hath already ſufficiently excited the internal and fermentative Spirit of the Grain, to reduce it from power into act, by the means of that ſpirituous ſubſtance which it had drawn from the water, that had rowſed and excited this Internal Spirit,

which

which before did lye Dormant, and concentrated in it ſelf: for, if you did let it lye longer covered, it would abſolutely ferment, and turn to putrefaction, which would ſpoil all the inmoſt part of the heap, and convert it into a confuſe and ſhapeleſs maſs, which would degenerate into Earth, and become as a ground and place of nouriſhment to the other part of the Grain in the Superficies; and in a ſhort time would grow and be converted into graſs, by reaſon of the exceſs and abundance of water, and the precipitation of the heat. Now to prevent all theſe accidents, you muſt ſpread your Malt or germinated Corn in a well aired place, and permeable to the wind, it muſt not be higher than half a fingers bredth, that it ſhould the ſooner be dryed; ſo ſhall the air and wind diſſipate the ſuperfluous humidity, and concentrate this vital and ſpermatick power, which otherwayes would have vaniſht away, and been loſt and diſſipated by the exceſs of heat and moiſture. When you begin to perceive the grain to grow dry in the ſuperficies, ſtir it often, to haſten the exſiccation of it; and, that the Spirit that was already in action, may recoil and concentrate it ſelf again in its own body; which doth not ceaſe, nevertheleſs, to retain a diſpoſition more inclinable to the production of its own Spirit, than all other Grain which hath not been ſo prepared. And as I have ſaid, that the Grain had ſuckt the ſpiritual and ſubtile part of the water, which was as its own preſervative Salt; we muſt inſiſt a little more in explicating this myſtery for the inſtruction, and in the behalf of ſuch as are not yet acquainted with the noble actions of Nature, and the ways ſhe uſes in her operations: Beſides, that it will bring ſome light to what we have already ſaid above, of Ferment and its action. To conceive this the better, it muſt be obſerved, that Nature hath placed in every Individual Subſtance a kind of magnetiſm, which cauſes it with a quick and ſudden earneſtneſs, to attract whatſoever is analogous to its Internal Spirit, from the things with which it is joyned. Now this Internal Spirit is ſhut up, as inviſible, in the viſible body of the ſulphureous volatile Salt contained in the kernel or groſs body of the Seed; which, to ſpeak properly, is the ſoul and life of the thing: ſo that, when this Grain ſoaks in the Vernal Rain-water impregnated with the inviſible Seeds of all things, it attracts potently and greedily, what is moſt fitting and analogous to advance it ſelf to that perfection to which it was deſtinated by Nature. And, when it is filled with it, it begins to conceive a heat in it ſelf, and to ferment, whereby to produce the bud or germen, which is the principal of all vegetation: which would act and extend its power further, if the

Artiſt did not check and draw back this ſtirred power, which unleſs hindred, would paſs into action. But the cleareſt and moſt natural proof we can bring, that the Grain hath attracted the ſaline and ſpirituous portion of the water, is, that this water in a very ſhort time will turn to corruption, and doth contract a putreſcency and ill ſmell above all others, which doth ſo offend and irritate the Brain and the Organs of Reſpiration, that it will almoſt choak thoſe that come near unto it. They that in *March* and *September* uſe to go by the doors of Brewing-houſes, may beſt give teſtimony to this truth: for, thoſe two ſeaſons being the time they prepare greater ſtore of Malt for Brewing of their Beer, and the waters lying ſtill in their houſes and the ſtreet, they produce a moſt abominable and nauſeous ſmell. And they that have wrought with Equinoxial water, and preſerved full Casks thereof, know that it never corrupts, and can keep without corruption whole years, which is not ſo with the Rain-water of other ſeaſons of the year. By which it evidently appears, that this long preſervation cannot proceed, but from the ſaline Spirit, which the Stars had as it were darted with their influences into this water; and, that as the Corn hath attracted it by its magnetiſm to help germination; ſo the water being deprived thereof, could not preſerve it ſelf without alteration, corruption and putrefaction.

Take ℔ xij. ß. of this Grain ſo germinated, or Malt, being dryed and put it to ℔ xxx vij. ß. of Wheat, Rye, or Barley, ſeverally, or all the three kinds together; and let it be groſly grounded, as Brewers do their Malt for Beer: Having thus your Meal prepared, put half of it in a Cask, newly emptied from Wine, and as much in another; pour upon it half boyling water with Buckets, and ſtir inceſſantly your Meal with a wooden Shovel, or any like Inſtrument, and a four pinned woodden Fork, to moiſten throughly your Meal, and make as it were a diſſolution of the internal ſubſtance of the Grain; and, when you have put 8 or 10 Buckets of ſcalding water in the degree afore-mentioned, and that the Meal is well mixt and allay'd, add ſome cold water, untill all be reduced to ſo moderate a heat, that the hand may be ſuffered therein without hurt or inconveniency: that done, proportion to every Tun of Liquor half a Bucket full of Yeſt of Beer, which ſhall be unto it inſtead of a Leven or Ferment; becauſe this Yeſt is nothing elſe but fermented Flower, which the action of fermentative Spirit expels out of the Cask as unneceſſary, ſuperfluous and full of feculency, having preſerved yet in it ſelf the fermenting power which it is capable to introduce in the matter which is to be fermented. Having diligently

gently and exactly agitated and mixt the Leven with the matter, you muſt cover the Tuns with wooden covers, and put on the top a Linnen four-folded cloth, and thereupon a Rug, and look from time to time if the fermentation begins, which ſhall be noted by the riſing of the groſſeſt part of the Corn above the Liquor, and a ſwelling round about in the figure of an Hemiſphery: Things being thus prepared, take care the matter ſhould not run over, and make too quick an ebullition, which is a token of too much heat or too much leven; and, in ſuch caſe, take away two Buckets full of it, or pour upon it a Bucket of cold water, and then let it work of it ſelf. That which is moſt worthy of a Phyſical Philoſophers conſideration, and more to be admired in the working of this fermentation, is, that when that round ſwelling in the ſhape of an hemiſphery is formed; and, that the Ferment hath raiſed the groſs body of the Grain to the ſuperficies, then appears the wiſe Providence of the Great Maſter of Fermentations; for it ſerves as a Bulwark and defence againſt the eruption of Spirits, which act upon the matter from the center to the circumference, and play under this incruſtation, until they have diſſolved and volatilized all the parts of the body, upon which they act, except the uppermoſt skin, which is about this incruſtation, which cleaves by intervals, and diſcovers under it a Cream as white as Snow, that dilates it ſelf and frames bubbles: which breaking, affects the Noſtrils with a ſpirituous penetrating vapour, ſubtile and biting, that tickles the Noſe, and would in a ſhort time ſtupifie and inebriate; if you held your Noſe over the Veſſel, juſt as the volatile and narcotick vapour of Wine would do, when it begins to ferment in the Veſſel. Now as we have engaged by the Fermentation we would deſcribe, to ſhow the nature of that which is performed in mans ſtomack; for a greater evidence of this truth, we will make a parallel betwixt both: for, as it is evident, that purity is ſeparated from impurity; and that the ſubſtances which did ſeem to be heterogeneous become homogeneous by the action of the Ferment, which diſſolves the ſubſtance of the Grain, and mixes it with the water, to alter its taſte and odour by communicating the Spirit unto it; the ſame is performed in the Ventricle, where all whatſoever we ſwallow of a liquid and ſolid ſubſtance, doth mix and coaleſce together to become one maſs of the ſame nature, though it ſhould ſeem that what we have taken in, ſhould be of very different kinds and qualities, as hard and ſoft, ſalt and ſweet, harſh and ſpiced, fat and Oily, the acidity of the Stomack, and whatſoever elſe of ſeveral ſubſtances meet there: all that, I ſay, makes an uniform chyle, by the help of the volatile Spirit, lurking in the bottom of the Stomack, and of an acid nature, as is alſo aliment of Leven. But, that which doth yet more illuſtrate this conformity and likneſs of fermentation, is, the ſmell, which by eructations or belchings is brought ſome few hours after meals to the mouth and noſtrils, which do repreſent the taſte and ſmell of what hath been eaten and drunk; and chiefly, after drinking new Wine or new Beer, the belchings in their ſmell yield by their exhalation, a fermentative and tickling Spirit, like unto that we have mentioned above, which cannot better be apprehended, then by comparing thoſe bubbles, which are formed in the pureſt part of the chyle of our fermentation of Grain, which ſend forth this ſubtile and tickling Spirit that doth invade the Noſtrils; for the ſame happens in the Stomack, and when the eruption of theſe bubbles is made, it forces the action of belching, and then appears to the ſenſe the taſte and ſmell of what predominates in the chyle. All what we have now ſaid, doth ſhow how much it doth import, that as a Phyſician ſhould be well skilled in the good fermentation and its effects, ſince from her doth depend the preſervation of our health: ſo muſt we alſo be well verſt in the contrary diſpoſition of it, which is for the moſt part the occaſional internal cauſe of all diſeaſes; a truth confirmed by *Hippocrates* himſelf, when in his Aphoriſms he ſaith, *That the ſowre or acid belchings of ſick perſons recovering, are of a good preſage*; which ſignifies no more in ſubſtance, but, that the Stomack begins to recover its ſtrength, and the digeſtion to be well performed, becauſe the fermentative natural acid hath recovered the upper hand; whereby it may ſafely be concluded, and with great reaſon, that all things will go better and better.

But we return to our Fermentation, which, during this digreſſion, we left in its progreſs; the knowledge whereof is of no ſmall importance. We ſay then, that when the Artiſt ſees, that what was lifted up by the action of the Spirit, is fallen again to the bottom of the Veſſel; and knows by the taſte, that the ſwimming liquor on the top hath acquired a taſte between ſweet, acid, and pricking; and, moreover, that its ſmell evidences the like to have contracted a vinous and ſpirituous odour, which doth recreate the Senſes is of a ſubtile nature, and happens for the moſt part towards the fourth or fifth day; then muſt you anoint the bottom of the Veſſel to be uſed in the diſtillation of hot Spirits, with a piece of Bacon, to hinder the matter in the bottom to cleave unto it, and contract an aduſt taſte or empyreumatical ſmell noxious to the Spirit; after this, agitate your fermentation with a wooden Spatula, to cauſe the ſubſtance in the bottom equally to mix with the liquor, whereof your Veſſel muſt be filled, till it reach half foot near to the top; and continually ſtir it, until it be ſufficiently heated by the fire, to raiſe up all the body; then without danger may you cloſe up the Veſſel with its Moors-head or Still, luting the Joynts and quickning the fire, until you can no longer endure your hand to put upon the Still-head without burning; then you muſt exactly cloſe the door of the Furnace and its Regiſters with great care and precaution, and ſo patiently expect until the Spirits begin to aſcend in a vapour into the Worm or Pipe, where they are condenſated in a ſpirituous burning liquor, which falls by drops into the Recipient. You muſt entertain the fire in that degree, until the liquor coming forth be totally inſipid; then open the Veſſel, and draw out the matter to fill it with new; and ſo continue till you have diſtilled all what was fermented. That done, put into the Veſſel again all the diſtilled liquor, and throw into it two pound of new and warm white loaf of Bread, or toaſt it in want of new; becauſe the Bread attracts to it ſelf all what may be of ill ſavour in the firſt diſtillation; then cover the Veſſel, and give it, a regular fire, according to the beſt judgment, until the Spirit begins to diſtil, as we have already taught; and ſo continue until the phlegm aſcends, which may eaſily be perceived by the taſte. So ſhall you find after this rectification an *Aqua vitæ* or hot Spirit, of very good taſte and odour, and little inferiour to that which is extracted from Wine, though the Grain of it ſelf be flat and without taſte, which illuſtrates ſo much the better the wondeful effects of Art and Nature, and verifies the ſaying of that learned *Roman* Philoſopher *Morienus*, *Quod eſt occultum fiat manifeſtum, &c. è contra*: which can never be done but by the help of ferment which penetrates into the moſt inward parts of Mixts, and diſcovers unto us there, that which our Intellect or Senſes ſhould never have found otherwiſe.

They that will ſubtilize this Spirit by a third diſtillation, may do it, and add upon the whole a Bucket full of Wine-lees: then will it become ſo ſubtile, and ſo delicate, that the moſt skilful may be deceived in their differencing it from Spirit of Wine, either by the taſte or ſmell. It may then be applyed to all ſuch operations, wherein *Aqua vitæ*, and Spirit of Wine are neceſſary; which will be very uſeful to thoſe that apply themſelves to Chymical practice, in ſuch places where there are no Vineyards, or *Aqua vitæ* is at a dear rate. I do nevertheleſs adviſe, to keep the Spirit of Wine in Chymical operations, becauſe it is ever more pleaſant, ſubtile, and penetrative: but, when you are deſtitute of it, you may lawfully ſubſtitute this Spirit, in the compoſition of all ſuch remedies, where *Aqua vitæ* is neceſſary. We ſhall not mention here the vertues of this Spirit; becauſe, beſides that it is commonly known for a great warmer, reſtorer, and ſtrengthener; we purpoſe to ſpeak thereof when we ſhall treat of the Spirit of Wine. We muſt nevertheleſs add ſomething more in the behalf of curious Artiſts, which have a mind to make this Spirit, and yet live in ſuch Countreys where they know not what belongs to the making of Beer, and by conſequence have no Ferment or Yeſt, which proceeds from that Liquor to raiſe the fermentation of Meal. Now there is no place in the world where Bread is not made, and conſequently, where there is not Leven or Ferment, wherewith the Dow is raiſed in making of the Bread; wherefore let them take ℔ ß. of ordinary Leven, which ſhall be mixt with ℔ ij. of Meal in xv. or xx ℔. of luke-warm water; then let the Veſſel containing all this be covered, and the fermentation of this Liquor be patiently expected, and when you ſee it begin, and the Meal to riſe up on the top, and the Liquor to ſwell, then introduce this Liquor in any matter which is to be fermented, and you ſhall perceive the effects as we have already ſpoken of to follow, but not ſo quickly as if Beer-yeſt had been made uſe of.

We have but one thing more to add, which is, that to ſtir up the fermentation of Meal or Grains, you muſt put ſome of that which hath already been prepared: but you muſt know, that the Artiſt ſhall not extract ſo much Spirit, that it ſhall not be ſo ſubtile nor ſo delicate, nor have ſo kind a taſte: and moreover, that which is more important, is, that fermentations ſhall not ſucceed ſo well, as when this Grain is joyned to the other, which makes it fitter for fermentation, and that when it hath duly been ſo performed, all the diſtillations are much more ſucceſsful, becauſe this Grain, which hath been opened by its preparation riſes up eaſily, and draws up to, and with it ſelf, that which hath not been prepared. And if I am asked, why I have not preſcribed prepared pure Grain to be made uſe of; I ſhall anſwer, that it would be unfit, becauſe the Ferment would too ſoon volatilize the ſame, and ſo the moſt ſubtile part of the Spirit ſhould vaniſh and loſe it ſelf before it could be diſtilled: and moreover, that the matter would too ſoon aſcend the Still-head, by its quick ebullition, and come forth in body and not in ſpirituous vapour, as it often happens with ſuch as are not yet well verſt and experimented in the diſtillation of fermented matters.

The Preparation of the Spirituous Water and Ætherial Oyl of Aniſeeds, Fennel, Parſley, and the like.

YOu muſt take one of theſe Seeds, the freſheſt you can procure it, and put thereof 4. 6. or 8. ℔. groſly powdered in your Stillatory Veſſel according to its bigneſs and the quantity of water which it may contain, and pour upon it River or Rain-water, till it comes to $\frac{1}{2}$ foot near the brim of the Veſſel: which being ſhut, adminiſter a graduate fire, till the drops begin to fall into the Recipient; then ſtop your Furnace and continue your diſtillation, until the water comes away without any ſmell, and no Oily ſubſtance be ſeen to ſwim on the top; then ceaſe the fire and open your Veſſel, and drawing the matter wrought upon, ſubſtitute new whileſt the Furnace is burning: but you muſt have before ſeparated the Oyl from the Water, to pour it afreſh upon the new Seed; for, by this way ſhall you procure much more Oyl in the ſecond then in the firſt diſtillation, and as theſe Seeds are commonly rather diſtilled for their Oyls ſake then their water, this part muſt therefore alſo be more heeded. The Oyl muſt be ſeparated with Cotton, as you ſhall be directed in the figure deſcribed by the *Veſica* or diſtilling Veſſel for Spirits in the Chapter of Veſſels. And if the Oyl ſhould not be flowing, but congealed, as it happens to the Oyl of Aniſe, you muſt ſtrain the Water through a clean Linnen, and the Oyl will remain above it, as we have ſaid above, when we ſpoke of the Oyl of Roſes. It muſt only be noted, in the way, that ſome Authors will have theſe Seeds to be digeſted, before they come to be diſtilled, pretending that they will yield much more Oyl to the Artiſt, becauſe the body of the Seed will be more opened: but they do not obſerve that theſe Seeds do abound in volatile Salt, which is of a median nature, ſo that the Water cannot attract it to it ſelf, by the length of digeſtion; which will happen otherwiſe, if the diſtillation be begun immediately after the Water and Seed be mixed together: It is true, that if digeſtion doth precede, that the Water thereof will be all ſpirituous, and of much more efficacy then without it: but it will yield much more Oyl according to the rule of our preſcription. We ſhall ſay nothing of the vertue of theſe Oyls and Eſſences ſo improperly called, no more than of their *doſis*; for ſo many others have fully treated of this Subject, that it would prove but a tedious repetition.

The Preparation of Seeds of Garden Creſſes, Muſtard, and other of the like Nature.

ALthough theſe Seeds have in themſelves great ſtore of moſt ſubtile, volatile, and moſt penetrating Salt, as may be concluded from their taſte; yet fermentation doth not cauſe them to yield a hot burning Spirit, as many other Vegetables: but it opens them, and rarifies nevertheleſs in ſuch a manner, that all the Salt and Oyl which theſe Seeds have in themſelves, and wherein all their vertue is placed, aſcends in Vapours and Spirits, which being condenſed into Liquor, fall again into the Recipient, with ſo ſubtile and penetrative a ſmell, that it invades the Eyes and Noſtrils, and paſſes into all the Conduits of the Brain, with as much quickneſs as the moſt ſubtile volatile Spirit of Urin might do. It is not neceſſary we ſhould repeat here, the proceſs of Fermentation and Diſtillation; it will only ſuffice, to give the neceſſary precautions for the work, becauſe theſe Seeds are of a different nature from the other, by reaſon of the ſubtilty of their volatile Salt. There muſt then a ſpecial care be had, that the Veſſel wherein the fermentation is performed, be not above half full, that the matter may not riſe too high in the action of the Ferment; the ſame precaution muſt be uſed in the Stillatory Veſſel not to fill it above half, to lute it exactly, and regulate the fire with a clear judgement, and an orderly aſſiduity, otherwiſe all would aſcend in ſubſtance in the Still-head. The Spirits may be rectified in *B. M.* if they are deſired more purified and more ſubtile than by the *Veſica* or ordinary Stillatory; they are true diuretical and aperitive remedies; above all, to remove the Obſtructions of the Spleen: they are moreover true ſpecificks againſt the Scurvy: the *doſis* and vertue whereof hath been ſpecified above, when we ſpoke of Antiſcorbutical Plants, whither we refer the Artiſt for his better information.

But as the Oyls and Spirits of theſe Seeds may be extracted without addition; and that moreover it is neceſſary to diſtil them in this manner for external uſes: We ſay the right way of operating to be this: fill two parts of a Glaſs Retort with any one of the Seeds, but chiefly of Muſtard, by reaſon of the ſingular vertues of its Oyl: then place it in a Furnace upon an Earthen cover turned upſide down, filled with Sand, which will be unto it inſtead of a Lute; then cover the Furnace, and fit a large Receiver to the neck of the Retort, and lute it with quick Lime and whites of Eggs, and give it a regulate fire, until the drops begin to fall, keeping it in that tenor until the Oyl begins to appear; then encreaſe the fire by little and little, and urge it until the Receiver, which was dark with fumes, begins to clear again of it ſelf, which is a manifeſt ſign, that the action of the fire hath driven into the Recipient all the vapourable ſubſtance contained in the Seed, and ſo conſequently that no more is to be expected. This operation is commonly ended in the ſpace of 12 hours. All the Veſſels being cold, take the Receiver off from the Retort, and ſeparate the Subſtances that will be found therein, which you may rectifie if you will: but as they are only intended for outward applications, it will not be very neceſſary: but if you intend to rectifie them, leave the Spirit and Oyl together, and infuſe them in a low Cucurbit, which being covered with its Head, put it in aſhes, and give it a graduate fire, until the volatile Salt and Spirit begin to appear in the Still-head; then keep the fire only in an equal tenor, until the Phlegm begins to aſcend, which the taſte will diſcover: for the volatile Spirit which is actuated by the ſame Salt, is extraordinary biting, ſubtile, and penetrating, and the Phlegm hath only an acid and almoſt inſipid taſte: this done, change the Recipient, and ſtrengthen the fire to make the Oyl aſcend, and ſo continue till nothing more comes away; then ſeparate the Oyl from the Phlegm, put the diſtilled and rectified matters in Glaſs Vials, exactly ſtopt by reaſon of the ſubtilty of this Spirit and its volatile Salt. The Spirit doth wonders being applyed upon ſtarved Limbs, well fermented with Spirit of Wine, and freſh ſtale; then make a liniment with *Unguentum Martiatum*, Man's-fat, and the Oyl of Muſtard-ſeed, applyed upon it; which will raiſe up again natural heat in the part, and attract the Spirits of other parts more remote; and the itchings and vellications of the skin fore-running the total recovery, being felt by the Patient, will be a ſufficient teſtimony thereof: thence it may be concluded, that it will be of a Soveraign efficacy, in all benummings of Sinews, their ſhrinking looſeneſs, which are the occaſion of Palſie, or Contraction of Limbs; provided the Spirit of this Seed made by fermentation be exhibited, and that the Patient be made to ſweat after. The Oyl unrectified, does mundifie, cleanſes and fleſhes again the moſt filthy and malignant ulcers, diſſolves the knots and hardneſſes of Gowt and venereous diſeaſes; but you muſt at the ſame time make uſe, and even a little before, of the internal remedies, ſuch as we ſhall teach hereafter to extract out of Mercury and Antimony.

We ſhall not ſpeak here of the *doſis*, nor excellent vertues of the Spirit extracted by fermentation, from theſe kinds of Seeds; becauſe we have already ſufficiently inſtructed the Artiſt of it, when we ſpoke of the verue and *doſis* of the Plant called *Cochlearia*: I will only add this, that where this Plant ſhall fail, you may ſubſtitute the Spirit of the Seed of Garden Creſſes, which will produce the ſame effects, and be uſeful in the ſame diſeaſes: but it would be better nevertheleſs, to diſtil the Plant whole, when it is only between Flower and Seed.

The manner of Extracting from Juniper-berries, all the good and vertue contained in them, for the uſe of Chymical Pharmacy.

ALthough this Plant be common, it deſerves nevertheleſs no common or mean Eulogies, by reaſon of thoſe excellent remedies it affords to Phyſicians by the help and induſtry of Chymiſts: for whoſoever will conſider that ſhrub with a diſquiſitive and Philoſophical Eye, ſhall be forced to acknowledge, that it contains ſome extraordinary vertue, both becauſe it doth reſiſt the injury of Winter, and all its ſtorms; and by reaſon of the length of time which Nature doth beſtow in bringing its Berries to maturation; whence we are neceſſarily perſwaded, that there is in this ſhrub ſome intrinſecal Balſom, which doth maintain and preſerve the ſame, and yet hardly and with difficulty ſhews it ſelf in the fruit; ſince two re-iterated viſits of the Sun are neceſſary, and the maturation of two years, before the Juniper-berry be fit to be gathered with all its requiſite perfections. We ſhall then Anatomize all the parts which this admirable Plant doth furniſh us withall, being thereunto invited by thoſe excellent remedies it doth adminiſter unto us; although we be bound to ſpeak alſo of other parts then the Seed, which is the proper ſubject of this Section. We ſhall then, firſt of all, ſpeak of the Wood, which doth yield an acid Spirit, an Oyl and a Salt. Secondly, we ſhall ſpeak of its Berries, which before fermentation do yield a ſpirituous Water, an ætherial Oyl, and a cordial and alexiterial Extract; and after fermentation, a hot burning Spirit, a purging and diuretical Extract, and then we will teach the Preparation of the true Tincture and Elixir of the Berry, to conclude finally by the Gum; whereof an Oly for the Sinews, and an anodine Balſom is extracted.

The Juniper-wood muſt be gathered with its leaves or pricky excreſcence, and its Berries, whether ripe or not: and ſhred or cut in ſmall pieces, ſo as they may be put in a capacious earthen Retort;

which being placed in a cloſe Reverberatory Furnace, the Recipient being fitted with all requiſite and neceſſary precautions, a gradual fire muſt be given to it, and ſo continued until it hath driven out all the Oyl or Spirit contained in the Wood, the true token whereof is, when the Receiver doth grow clear of its ſelf; the time of this operation will not laſt above 12. or 15. hours at moſt. The Veſſels being cooled, ſeparate the Oyl from the Spirit; the Spirit will remain reddiſh, becauſe it is impregnated with the tincture of the Oyl communicated to the ſame by the volatile Salt of the Plant: if you will rectifie it in Sands or Aſhes, you ſhall have a very pure acid Spirit, provoking Sweat, and diuretical: The *doſis* is from ℈ j. to ʒ j. in Wine, or ſome convenient decoction; it hath as much, if not more vertue then the Spirit of *Guaiacum*, for venerial diſeaſes: but above all things, it is ſingular in the bitings of Vipers, Serpents, or other venomous creatures, if it be given in the ſame *doſis*, and the wound be waſhed with it, and with new ſtale; it is not requiſite to rectifie the Oyl extracted from the Wood, becauſe it is not inwardly uſed: It is exceeding good to hinder the accidents of cutting of Sinews, and bitings of any creatures when provoked, becauſe the volatile Salt contained in it, doth penetrate to the deepeſt parts of the wounds, where it corrects the malignant impreſſion of venom, and hinders its progreſs and further ſpreading: But the Patient muſt take at the ſame time Spirit of Juniper-wood, in warm Wine, with xx grains of ſcraped Nutmeg. The Oyl moreover, is ſingular to appeaſe the pain of rotten Teeth: it equals the vertue of *Guaiacum* for the cure of old Ulcers; chiefly if they be ſeated near the Joynts where many ſinews do concentrate, many griſtles, and cartilages, which do feed for the moſt part Ulcers with their jelly, ſlime, and viſcous ſuperfluous moiſture hindering conſolidation: this Oyl doth digeſt and conſume all theſe ſubſtances againſt Nature, and reſtores a good ground, which doth afterward cicatrize and fill up the Ulcer, and ſo brings it to a perfect cure.

Having wrought upon the Wood, let us go on upon the Fruit, which are the Berries containing the Seeds in a glutinous and viſcous body, covered and wrapt up in a thin outward skin black and ſmooth; when the Berry hath attained its perfect ripeneſs, which comes to paſs the ſecond year after its production, about the midſt of *September*, which is the true time of gathering; the Sun being in the ſign of *Virgo*: For anticipating that time the Berry would not yet prove ſufficiently ripe, neither have in it ſelf, that ſweet bitterneſs, and Balſamical Honey, which contains its volatile Salt, and by conſequence, its Spirit; when you have a ſufficient quantity of theſe Berries ſo conditionated; *viz.* very black and ſmooth, odoriferous, if they be rub'd and cruſht, and that the Oyl remains in the nail, and ſtrikes the Noſtril in the bruiſing thereof, having their internal ſubſtance of the conſiſtency of Honey and viſcous, with ſmall grains within the fleſh, which are the Seed thereof; and when you maſticate it, taſting at firſt with a ſweet and balſamick taſte, which by degrees degenerates into no unpleaſant bitterneſs. It will ſeem perhaps, that we have enlarged our ſelves too much upon the qualities which this fruit muſt have; but as the vertue of the prepared ſubſtance depends on the goodneſs and qualities thereof, ſo was it neceſſary to declare it at large, that the Artiſt may not loſe both time and matter in vain, as it is too uſual a thing to do.

℞ ℔ viij. of Juniper-berries thus qualified, as we have ſaid; beat them in a brazen Mortar, with a great wooden Peſtle, until you find them to be all maſht; then put them in a Still Body, and pour upon them either Rain or River-water, until it comes ½ foot near the brim; then cover and lute it, and give it fire according to the Rules of Art and good Judgment, and ſo diſtil a ſpirituous Water and ætherial Oyl, which will ſwim above: obſerving ſtill that you muſt not take off your eye from the Recipient, when the Water and Oyl begin to aſcend into the neck of the Recipient: for as this diſtillation is only intended to extract the Oyl, you might loſe it all by your own fault; becauſe if the Water did over-power, all the Oyl would vaniſh: and to prevent this loſs, you muſt watch carefully to ſubſtitute another Receiver when the Oyl doth begin to reach within three or four fingers of the Orifice of the firſt Recipient: and ſo continue your diſtillation, until no more Oyl appears on the Water, when you receive or put for tryal your Water in a Spoon. This operation ought to be continued in this manner, until you have made an end of all your Berries, re-affunding ſtill your diſtilled Water upon each diſtillation, after you have ſeparated the Oyl with a Cotton. But if you will make the ſimple Extract, the Honey or Theriack of the Germans with theſe Berries, you muſt ſtrain and percolate ſome part of theſe diſtillations being warmed, and ſlowly evaporate them to the conſiſtency of a thick Syrup, or liquid Extract. If it be objected, That the Oyl is already ſeparated from it, and that conſequently, the vertue of it will be abated, the anſwer is eaſie: for you are to conſider, that the Oyl would be evaporated nevertheſs, during the coction and evaporation, as is ſufficiently witneſſed by its ſmell ſpreading about, when the Extract is made before the Oyl be ſeparated.

Take all what remains from all the Diſtillations, without ſeparating any thing, and joyn to it the Cake remaining from the expreſſion of the Extract; fill the Still-body full of it to warm, and ſo by it communicate the heat to the remainder: which, I ſuppoſe, to be put in a Cask or Barrel for fermentation: introduce the Leven or ferment into it with the circumſtances and requiſite precautions, and ſo leave it four or five days; after which you ſhall diſtil it at ſeveral times, until you have made an end of extracting all the Spirit: the which rectifie in the ſame Still-body (*viz.* the *Veſica*) with ℔ vj. of new ſelect and bruiſed Juniper-berries, and you ſhall have a burning Spirit, of very excellent and particular vertues: ſeparate the firſt Spirit by it ſelf, as alſo the ſecond and the third, to be made uſe of in ſuch caſes as we ſhall ſay hereafter.

And to let you know, that Chymiſtry loſes nothing of what may be made uſe of, percolate and ſtrain the remainder of the fermented diſtillation, and being warmed, run it through a Hypocras Bag, or a Flannel; then evaporate it to the conſiſtency of a liquid Extract, which is one of the ſweeteſt and gentleſt Purges that may be uſed: This Purgative faculty will perchance, and not without reaſon, make ſome to wonder at it: But we will remove this ſcruple, giving to underſtand that the action of the ferment hath diſſolved and united with the Water the beſt part of the fixt Salt of theſe Berries, and as fixt Salts looſen the Belly; it is the ſame alſo, which being predominant in this Extract, doth cauſe its purging vertue.

This done, dry the Cake remaining from all the expreſſions, and calcine it, to make a Lye thereof, and extract the Salt thereof according to the method which we have formerly declared, then reverberate it in the Crucible without melting, and diſſolve it in the laſt diſtilled Juniper-Water; then filtrate and evaporate it to a skin, and cauſe it to ſhoot into Cryſtals, which preſerve for your uſe. Thus much we had to ſay upon Juniper-berries; it remains only to ſpeak of the Vertue and Doſes of thoſe noble Preparations, which this Seed doth furniſh us with, and to give you a deſcription of an Elixir or Tincture of Juniper-berries: which is a moſt accompliſht remedy, whereof we ſhall alſo ſay the uſe and properties.

We will give to Juniper-berries in general, the vertues which they deſerve, before we come to the particular properties of each of the remedies thereof extracted, that this general Application may ſerve, to make the better our Obſervations, when there ſhall be occaſion to uſe thoſe remedies. And in the firſt place, we ſay, that the principal uſe of theſe Berries is to incite, attenuate and diſſipate in general: But they are particularly uſed to provoke Urine and Sweat, to move and bring forth Lunary Purgations, remove obſtructions of the Spleen, correct affections of the Brain, Sinews, Breſt, and cure Coughs, diſſipate Winds in the lower parts of the Belly and Collick, and above all, to diſſolve and evacuate the viſcous and ſlimy ſubſtances, and Sand in the Bladder and Kidneys: They are alſo moſt uſeful to uſe as a Preſervative in time of contagious Diſeaſes, either eaten, or uſed by the way of a Perfume, to correct the venenoſity and malignant diſpoſition of the Air.

It is now very eaſie to apply to every one of the Remedies prepared their proper vertue, for it is common to all, ſince they were extracted from that body which contained them, except the laſt Extract, which is purging, for the reaſons before declared. The ætherial Oyl of Juniper is a Soveraign Remedy to provoke Urine, and appeaſe all pains of the Colick; it is alſo an excellent Topical Remedy in all cold affections of the Sinews; as alſo in the pricking or cutting of Sinews, by reaſon of its penetrative quality, but chiefly its Balſamick vertue. The *doſis* is from iij. drops to xv. or xx. in white Wine, or its own Water. The ſpirituous Water is extracted at the ſame time as the Oyl, is diuretical, and diaphoretical: The *doſis* is from ℥ j. to iv. or ℥ v. but it hath quite another operation, when exalted with ſome drops of its Oyl mixt with Sugar in Powder, to make them diſſoluble and mixt together. As for the Extract made before the Fermentation, it is a very good Remedy of it ſelf to ſtrengthen the Breſt and Stomack, a very excellent diuretical, and ſafe alexitery; therefore it is made uſe of in ſtead of common boyled and skimmed or depurated Honey, to receive the Powders which enter in that excellent compoſition, and famous *antidote*, called *Orvietan*: It is a body of a wonderful uſe alſo for the compoſition and incorporating of Subſtances that are deſtinated for Opiats, or liquid Electuaries, againſt the Plague, all other contagious diſeaſes, and the venerious diſeaſe and its branches: The *doſis* is from ʒ ß. to ℥ ß. But the Spirit is an agent far ſurpaſſing all what we have ſaid, for it penetrates as in a moment the whole body: ſo that it may be employed in all diſeaſes wherein the Berries do conduce. And to prove manifeſtly its penetrating and Balſamick vertue, this is a token, That a Patient taking never ſo little of it, ſhall be ſure that the firſt Urine which comes from him, will have a very pleaſant ſmell of *Iris*, or Violets: The *doſis* is from ʒ ß. to ʒ ij. in Broths, white Wine, or its own Water: The *doſis* of the other unrectified

Spirits of the ſecond & third diſtillation, may be augmented in proportion to the ſubtilty of their parts. The Purgative Extract is wonderful, to receive in it ſelf the other purging Remedies either Roſins or Magiſteries, Extracts or Powders to prepare thereof ſome compounded Electuary, which with its purgative faculty preſerves and advances the vertue of thoſe things that were mixt with it. The *doſis* of this Extract is from ʒ ij. to ℥ j. either diſſolved; or taken in *bolus*; the quantity cannot be prejudicial, as is that of other purging medicines, becauſe it will never cauſe any *Hypercatharſis* or over-purging, neither make any dangerous Colliquation: but it looſens ſimply and ſoftly the Belly, by a natural deterſion of all the Excrements contained in the Entrails, which is a very requiſite vertue in many ſtubborn and obſtinate conſtipations or bindings. There remains only the fixed Salt to ſpeak of, which is diuretical and looſening, of the weight from ℈ j. to ʒ j. in Broths or its own Water, or what is yet better, in *bolus*, in the purging Extract. This Salt is alſo capable long to preſerve the vertue of its Water, if you diſſolve ʒ j. or ij. in each pint.

To prepare the Elixir of Juniper-Berries.

℞ Juniper-Berries very ripe and very ſmooth, and chooſe the biggeſt and ſmootheſt, till you have got ℔ j. which courſely bruiſe in a Marble Mortar with a woodden Peſtle; put them in a Glaſs-body double (or blind-head) and pour upon it the juyce of Parietary and Golden-rod, or *Virga Aurea, ana* ℔ ij. cover the Veſſel with its Blind-head, and digeſt all in *B. M.* during three dayes; then having uncovered it, percolate and ſtrain, and diſtil the Expreſſion in *Balneo* with a ſoft and ſlow fire, until there remains an Extract of middle conſiſtency, which put in a Pellican, or ſome other circulatory Veſſel, with *lib.* j. of the beſt Spirit of Juniper-Berries; then lute it, and put it to digeſt and circulate for the ſpace of 8 dayes in the heat of a vaporous Bath: that time over, let the Veſſels cool, then filtrate the liquor very pure, & you ſhal have the Elixir or Tincture of Juniper-berries; which is a very ſoveraign Remedy either to preſerve, or to cure, in Plague and other peſtilential and malignant diſeaſes: but this Elixir is peculiarly dedicated to the Kidneys and Bladder, not only to evacuate what is viſcous and ſandy in them: but moreover alſo to remove the ſeminary thereof, and hinder by a conſtant uſe of this noble Remedy, that there ſhould be no further ſpreading or generation of them. It is alſo a Stomachical and Hyſterical Specifick, which by its heat and

Alexiterial Balſamical and Cordial vertue doth diſſipate, whatſoever may cauſe evil alterations in the Ventricle or Womb. The *doſis* is from ½ ſpoonful to 1. or 2.

We have no more to ſpeak of Juniper, but concerning its Gum or Roſin, which is a very good Perfume againſt all defluxions of the Brain, if you receive the ſmoke in your hair and round about the Neck, as in the ſtopping of the Noſe, or impediment in the motion of the Neck, or when the Almonds are ſwell'd, and the free ſwallowing hindered; you muſt alſo perfume with it the Linnen which are put about the Neck, and the Head. But the beſt of all, is, that this Roſin, which commonly is called Varniſh, or Juniper-Gum, yields an Oyl by diſtillation, which is wonderful in external uſe for all affections of Sinews, againſt the cold, and the impotency of parts which are fallen into ſome Reſolution or Palſey, againſt all ſhrinking of Limbs, and generally all cold Aches in all parts of the Body, whereof no evident cauſe can be given, and no ſwelling nor redneſs appears outwardly. It is alſo very efficacious to diſſipate all cold cedema's, or cold ſwellings. And is thus done:

℞ Gum of Juniper Coals and decrepited Salt, *ana* equal parts; reduce them to a groſs Powder, and being well mixt together, put it in a Glaſs Retort, and place it in a cloſe Reverberatory: fit a Receiver to it, which being well luted, cover the Furnace, and give it a gradual fire, which encreaſe till nothing more comes forth, and the Recipient grows clear, which for the moſt part happens within the ſpace of 12 or 15 hours. Separate the two ſubſtances which are in the Recipient; for the one is aqueous and acid, which proceeds from the Salt, and the volatile part of the Gum of Juniper, with a ſmall portion of its Mercurial Spirit which alſo are acid: the other ſubſtance is oleagineous, inflamable and ſulphureous in ſome part, yet craſs and viſcous: therefore muſt this Oyl be rectified in Sand in a Glaſs Retort with Salt of Tartar, and ſo ſhall you have a clear, ſubtile, and penetrating Oyl, capable of all the noble effects we have attributed unto it.

SECT. VI.

Of Rinds.

WE ſhall have only two examples to give upon the Rinds in general, the one upon Limon-Rind and Orange-peel, which are volatile, and muſt be diſtilled in a peculiar manner,and with notes that are of concernment, and which the Artiſt muſt attend with care: the other ſhall be upon Rind of *Guaiacum*, which is more condenſed and fixt, that theſe two extreams being oppoſed and compared together, may clear the better the underſtanding in the apprehending of the truth of things.

To apprehend the better for what reaſon we are induced to diſtil theſe volatile Rinds, or Peels, otherwiſe than the Flowers which are no leſs volatile, we muſt take notice of the taſte and ſmell of theſe two Rinds, when they are yet tender, recent, and ſmooth, and compare them with the taſte and ſmell of the ſame, when the fruit hath been kept, the Rind is faded, grown rugged and half dry; for it will appear, that when new and freſh theſe Rinds will yield a pleaſant taſte and ſmell, which ſubtilly aſcends and inſinuates it ſelf into the Brain, recreates and ſtrengthens it: whereas when the fruit is old and withered, and its Rind ſhrunk in its ſelf; the taſte is unpleaſant and bitter, biting too much, and deſtitute of that vivacity and pleaſant ſteam, which it had before; which is, that notwithſtanding, that ought chiefly to be preſerved, if you will have any good ſucceſs in the Remedies prepared therewith. To attain unto it, chuſe the time wherein you may have ſtore of new Limons and Oranges in great quantity, and at a cheap rate, and pare the Rind very thin, until you have ij. or iij. ℔. which ſhred in ſmall pieces, and put in a Glaſs Cucurbite with clear water, until it ſwims ½ foot above the Rind; and diſtil it in Sand with a moderate fire at firſt, which increaſe by degrees, ſo long that the liquor dropping comes out without taſte or ſmell, and no Oyly ſubſtance appears above the ſtilling water. So ſhall you find an ætherial and ſubtile Oyl, which ſhall have the delicacy and vertue of the Limon or Orange-Peel, which keep for your uſe in Glaſs Vials exactly ſtopt. It might be here objected unto me, that I otherwiſe proceed than thoſe Authors, which formerly have preſcribed the manner of diſtilling thoſe Oyls: ſince I deſire they may be diſtilled aſſoon as the Rind is ſeparated from the Fruit: whereas others do preſcribe to digeſt and ferment the ſame, to purchaſe a greater ſtore thereof. To which we anſwer, that we have not here regard to the quantity, which ought to be the leaſt care of the Artiſt, when he perceives it may bring an alteration to the ſubſtance, and diminiſh the vertue: for as we have noted above, that the ſteam of theſe Rinds is ſo ſubtile, that it cannot but with difficulty be preſerved with its own ſubject, ſo ſhall it with much more reaſon vaniſh away, when it is ſeparated from it: and although it be true, that the quantity of diſtilled Oyl will be greater, when the Rind hath been left in digeſtion and fermentation for ſome time; nevertheleſs ʒ j. of that diſtilled according to our direction, will without compariſon exceed in goodneſs and vertue ℥ j. of the other. They that deſire to have yet leſs of Oyl, but will at the ſame time have an excellent Spirit out of the ſaid Rinds, muſt diſtil them with good and quick white Wine, and ſo ſhall they have a Spirit which will not be much inferiour to the Oyl which we have mentioned above, when we ſpoke of the Syrups made out of theſe Rinds, which will occaſion us to ſay no more for the preſent.

To make the Elixir of Limon and Orange Peel.

TAke the outward Peel of either of theſe two fruits, which being cut very ſmall, put in a double Veſſel (or blind body) to the quantity of ℥ ij. adding ℈ j. of Ambergrice, and vj. grains of Oriental Musk grinded with ʒ ij. of fine powdered Sugar, pour upon this ℥ viij. of the pureſt Spirit extracted with white Wine from either of theſe Rinds; ſtop and lute well your Veſſel, and put it to digeſt in a vaporous Bath to a ſlow heat the ſpace of three natural dayes; then let it cool, and percolate and ſtrain the contained matter, then filtrate it in a cloſe Veſſel, that nothing of the vertue may breath away or evaporate: preſerve this Elixir carefully, for it is a choiſe cordial Reme which hath few equals in great failings of the Heart & Spirits, & chiefly in ſudden accidents, after violent exerciſe, or after ſharp and quick pains. Both are very good for men or women with Amber and Musk, except thoſe which are ſubject to hyſterical Paſſions; for which reaſon you muſt not be unprovided of ſome without Musk or Amber for the fits of the Mother. The Elixir of Orange Peel is of much more efficacy than that of Limon for women, to whom it cannot enough be recommended for the great help and benefit they may receive from it in the time of their travels. The *doſis* of this Remedy is from ℈ j. to to ʒ j. either by it ſelf, or mixed with Wine, Broth, or ſome diſtilled Water appropriated to the diſeaſe or Remedy.

How the Spirit, Oyl, and Salt, Extract, Tincture and Magiſtery, of Rind of Guaiacum is to be prepared.

℞ of Rind of *Guaiacum* the heavieſt, moſt compacted, and moſt ſtreaked with black lines as you can meet with; powder it groſly, and put it in a Retort of Jugge-mettal, which place in a Reverberatory cloſe Furnace, which we have called above, a common Furnace: to the Neck of which fit a capacious Recipient, the joynts whereof you ſhall lute with ſalted lute; cover the Furnace and let the lute dry, and give it a gradual fire, until you ſee the white vapours to appear, and perceive ſmall drops of a reddiſh Oyl to mix with the veins which the Spirit doth make in the Recipient; then encreaſe the fire, even to flame, until the Recipient grows clearer of it ſelf. You muſt expect until the next day to open your Veſſels, and you ſhall find in the Retort the remainder of the Rinds converted into Coals, which you muſt calcine and reverberate in a Pot not leaded, with an open fire, to convert them to Aſhes, whereof draw the Salt by elixiviation, filtration, and evaporation, according to the manner which we have already ſo many times declared. This Salt muſt ever be mixed in all the Purgatives which you exhibit to thoſe that have a touch of venerious diſeaſes; for beſides that it quickens and helps the vertue of thoſe Purgatives, it purges of it ſelf, and is one of the Antivenetian Specificks. There is two ſubſtances found in the Recipient, one aqueous mercurial and acid, which is the Spirit of this Rind; the other is a craſs and heavy Oyl, which ſinks under this Spirit, by reaſon of the great quantity of volatile Salt, which cleaves intimately to the ſulphureous Oyl, and alſo becauſe a portion of the fixed Salt, which by the violence of fire was volatilized lies confounded in this Oyl; you muſt ſeparate the Oyl from the Spirit by filtration with Paper upon the Funnel, and the Oyl will remain above the Paper, bored with ſmall holes to make the Oyl flow in the Bottle appointed to receive it. This Oyl and Spirit may be externally applyed without rectification: for you may put a little of the Spirit in liquid fomentations, for the waſhing of cancerous, ſlimy, fiſtulous, and corroding ulcers, and principally thoſe which are cauſed by the venenoſity of the Pox: to apply the Oyl afterwards, either by it ſelf, or mixed with ſome unctuous body, which blunts the edge of it, that otherwiſe would become too painful. The vertue of this Oyl cannot ſufficiently be extolled for the cure of all old ulcers, and to diſſipate Nodus's, but above all, to haſten and to bring to paſs the exfoliation of Bones, provided you mix with it a little of the diſtilled Oyl of *Euphorbium*. But if you will uſe this Spirit and Oyl internally, you muſt rectifie the Spirit in Sand in a Limbeck; and as it is an acid Spirit, the Artiſt muſt be warned that the Phlegm doth aſcend the firſt, and that the biting acid Spirit aſcends the laſt; therefore muſt he ſeparate the Phlegm, and put a new Recipient when he ſhall perceive by the taſte, that the drops which begin to fall are acid. This Spirit doth powerfully withſtand the venemous quality of the Pox, expelling the ſame whereſoever it meets with it, by the way of Urines, Sweats, or inſenſible tranſpiration, provided it be impregnated with its Oyl, which poſſeſſes the beſt and greateſt part of the volatile Salt of our Rind, from which it muſt not be deprived if you will preſerve its vertue. To this end, it muſt be rectified in a Retort with the Aſhes remaining after the extraction of the Salt, and the Oyl ſhall aſcend fair, clear, and ſubtile, diveſted for the moſt part of its empyreumatical odour, which it had contracted in the firſt diſtillation: for theſe Aſhes mixt with the Oyl, will retain in themſelves all the impurity and groſneſs, but but not keep the volatile Salt, which is the active and virtual principle, not only of this Oyl, but alſo of the efficacy and power of all ſublunary Subſtances, becauſe it is the laſt ſhelter and bond of the ferment and internal fire of all Mixts; in which reſides the power and energy of all their actions: therefore, Artiſts muſt not wonder, if we ſo often do repeat the vertues of this Salt, and recommend unto them the preſervation thereof with ſo much earneſtneſs, conſidering we do it not by a vain oſtentation, nor to fall into needleſs repetitions, which are never to be born with, but when abſolutely neceſſary, as it is now for the preſent here in this place.

The general vertues of this Spirit and Oyl are to provoke abundantly Urine and Sweat; and by this means to mundifie and depurate the maſs of the bloud from all its impurities, to reſiſt the corruption of the parts, and preſerve their uſe, as the effects thereof make it appear in all diſeaſes of the Joynts, running Gouts, Dropſie, Cathars, and all other diſeaſes which draw their original from the viſcoſity and ſlimyneſs of tartareous and fixt matters: they are above all Specificks, againſt Venereous Diſeaſes, and all their dependances. The *doſis* of the Spirit is from ℈j. to ʒj. in Saſſafras water, or decoction of China Root, or Sarzaparilla. The Oyl from ij. drops, to vj. or viij. Which before you mix with the Spirit of other Liquors muſt be diſtempered with Sugar. Some are of opinion, that the Oyl of *Guaiacum* is that which *Rullandus* doth call *Heraclea*, in the Centuries of his Obſervations, where he relates ſo many wonderful effects thereof: which I am the more inclinable to believe, conſidering that a Taylor of *Paris*, by name *le Cerf*, hath been capable to raiſe unto himſelf a credit & reputation by the ſole uſe of Oyl of *Guaiacum*. Others do make uſe of this Oyl for the cure of Epilepſie, as alſo to help women in travel, and to bring forth the Child either dead or alive, as likewiſe the After-burthen: It is not to be forgotten alſo, that this Oyl doth in an inſtant appeaſe the pain of cariated Teeth; for the volatile Salt doth immediately penetrate to the ſmall Nerve, which lies at the Root of the Teeth, and ſtupifies and cauteriſes it in a manner, taking away its ſenſibility. Beſides the medicinal vertues of the Spirit, it is alſo uſeful in Chymical operations for the diſſolution of Pearls, Coral, Crayfiſh-ſtones, (Crabs-eys) and the like: but that which hinders moſt its uſe, is, that it alwayes leaves ſome *Empyreuma* or ill ſavour.

To prepare the Extract of Guaiacum Rind, and its Tincture.

TAke of the beſt Rind of *Guaiacum* you can meet with, reduce it to a ſubtile Powder, and put it in a Matraſs, and pour upon it Alkool of Wine, till it ſwims above the height of 4 inches; then digeſt it in Sand, and make an Extract thereof; ſeparate the tincture, and ſo continue with new ſpirit till it yields no more of tincture: then filtrate all the tinctures, and in a vaporous Bath draw off half of the Menſtrue again; keep by it ſelf ℔ *ß*. of this tincture, which is a good and quick ſudorifick: The *doſis* is from half a ſpoonful to one and two ſpoonfuls in warm Wine, or water of Saſſafras. Then take half of the remaining ſubſtance; and precipitate it with common water, and you ſhall have a Roſin, which you may prepare as that of Jalap: The *doſis* is from x to xx Grains, in *bolus*, in its own Extract: this is a Specifick againſt the Pox, working inſenſibly. Evaporate the remainder in *B. M.* to the conſiſtency of an Extract. The *doſis* being from ℈ j. to ʒ j. it produces the ſame effects as the Roſin or Magiſtery doth.

SECT. VII.

Of Woods.

THE Woods uſed in Phyſick are differing, in whoſe number we will rank alſo the ſpecies of it which are ordinarily imployed, to make Infuſions and Decoctions, according to the various intentions of thoſe which do employ them: but Chymical Pharmacy works in different manner upon Woods, according to the diverſity of their Nature: for ſome of them are gummy, reſinous and fat, preſſed and compacted, and others more ſaline, and conſequently of eaſier Extraction, there is extracted from them by the help of ſpagerical operation, Extracts, Waters, Spirits, Oyls, and Salts; whereof according to the diverſity of their ſubſtance more or leſs preſſed and compacted, we are to give examples: and for this purpoſe ſhall chuſe for the ſubject of our work the *Lignum Aloes*, *Lignum Rhodium*, ſo called in the ſhops, *Lignum Nephriticum*, and *Saſſafras*, becauſe the examples of all theſe four will be ſufficient and ſerve inſtead of all the reſt: for as concerning *Guaiacum*, Box, and other like, we have given you the method thereof in the diſtillation of Juniper-wood, and of Rind of *Guaiacum*, whereunto we refer the Reader for his direction of the work, and for the vertues to ſuch Authors as have written thereof.

The manner of preparing the Extract and Eſſence of Lignum Aloes.

WE have ſaid above, that Woods were of a different nature, and that for this reaſon we were obliged to give ſeveral examples of them: this we ſhall declare by the due preparation and extraction of *Lignum Aloes*, which is one of the beſt that is to be found in ſhops; in ſo much, that the *Germans* do give it the name of *Lignum Paradiſi*, Wood of Paradiſe, by reaſon of the noble and great vertues it doth poſſeſs: It will then ſuffice for a pattern and example of making all the Extracts and Eſſences of precious and aromatical Woods, becauſe theſe two preparations are made without any loſs of its vertues.

To make the Extract, ℞ ℔ ß. of the true Wood of Aloes, the tokens whereof are, that it be Blackiſh and of Purple colour, intermixed with veins of an Aſh-gray colour, heavy, and bitter; and the chief token, when you put a ſmall piece upon a hot glowing coal, that it ſhould yield a gummy and reſinous fat moiſture, the ſmoak whereof ſhould at firſt bite and ſeize upon the Noſtril, but towards the end yield a pleaſant and ſweet odour, as is that of Benjuin and Peruvian Balſom: and moreover, leave upon the coal after its burning ſome marks of a kind of liquation; this Wood muſt be groſly ſcrapt, and put in a Retort moiſtned with a little Spirit of Wine; then the Retort placed in Aſhes, adapt a Receiver, lute it, and give it a regulate fire, and with good judgment to avoid the Empyreuma or ſmoaky taſte, and ſo draw ſoftly the ætherial and ſubtile Oyl of this Wood, which will aſcend with the Spirit of Wine; and when the veins ſhall ceaſe to appear in the Recipient, and that the matter remains dry, ceaſe the fire, and put the remainder in a Blind Matraſs, and pour upon it Alkool of Wine to extract all its Reſinous ſubſtance; the Wood being well opened by this digeſtion, pour all into a Cucurbit, and diſtil with requiſite precautions about the third part of the Spirit by it ſelf: which done, ceaſe the fire, and filtrate the remaining Spirit, to add other Wood to it until it draws no more either of taſte or colour: then percolate and ſtrain the whole, and filtrate it to draw off the Spirit from it to the conſiſtency of a liquid Extract, which keep by it ſelf, and boyl the remaining Wood in the diſtilled Dew or Rain-water, ſtraining the decoction which muſt be clarified with whites of Eggs, and evaporated alſo to the conſiſtency of a liquid Extract: warm thoſe two Extracts and joyn them together, to draw yet a little more of their moiſture away, and reduce them to a maſs of more ſolid Extract, to which ſhall be joyned half of the firſt extracted Oyl, being firſt tempered, and made diſſoluble with powdered Sugar. Keep this Extract for its uſes in a Box of Silver, ſhutting with a ſcrew, that the ſubtile and operative part of it may not exhale.

Take the Spirit which you kept in the diſtillation of the extraction of the Wood; put therein ℥ j. more of the beſt Wood of Aloes reduced to a ſubtile powder, which you ſhall digeſt and extract in a vaporous Bath during the ſpace of ſix natural days in a Blind Matraſs, this done, expreſs and percolate the cold liquor, and filtrate it in a covered Funnel; joyn to this Liquor the reſt of the Oyl which you kept with twice as much of the Salt of the Wood, or prepared Salt of Tartar, according to the method of *Sennertus*, whereof we have already ſpoken, and ſo ſhall you have the true Eſſence of *Lignum Aloes*, impregnated with all the vertues and powers, of the Mixt whereof it was extracted. The *doſis* of the Extract is from iv. to x. grains in *Bolus*, or diſſolved with ſome ſpecifical burning Spirit: for beſides, that it would not diſſolve in aqueous Liquor, it ſhould come ſhort of the vertue; and though it ſhould happen to diſſolve, there would be a precipitation made of the reſinous and fat ſubſtance, which would never incorporate with the Water, and debelitate the remedy inſtead of increaſing its vertue. The *doſis* of the Eſſence is from iv. to x. drops to be exhibited to the Patient in burning or hot Spirits of Juniper, black-Cherries, or *Elixir Vitæ* of *Mathiolus*, and not in aqueous liquors for the reaſons alleadged above: but becauſe there are many tender and delicate perſons, which cannot endure the taſte and ſtrength of theſe Spirits; the Extract or Eſſence may be a mixed with ſpoonful of convenient Syrup, of ſomewhat a thick conſiſtency: for the Sugar keeps back the Water and hinders its action upon the reſinous ſubſtance of the Extract or Eſſence. Theſe two remedies are two ſpecifical comforters of all the principal parts contained in the lower-moſt, middlemoſt, and uppermoſt ventricle; it recreates the vital Spirits and animal Spirits of the Brain and Womb: therefore it is excellent againſt all infirmities of heſe two parts: they are alſo very good to ſtrengthen the digeſtive faculty of the Stomack, kill by the bitterneſs of their Salt and Spirit the Worms which breed in the Ventricle, and extirpate totally the ſeminary thereof, as much in aged perſons, as young children, except that a regard muſt be had to the *doſis*.

To prepare the Water and Oyl of Lignum Rhodium.

WE bring this Wood for an example, to evidence that it is neceſſary for a Chymical Artiſt, to work upon all kind of Subſtances to extract their vertue, without any deperdition of their pleaſantneſs, for it would be very eaſie to diſtil this Wood, by a Retort in open fire: but its pleaſant ſmell ſhould be loſt; and beſides, the Spirit and Oyl which ſhould be extracted that way, would not have the ſame proprieties, with thoſe of the Water and Oyl extracted by the method which we are now about to teach; and becauſe the *Lignum Rhodium* is a heavy Wood, fat and compacted; it muſt be opened before you can by diſtillation extract the central vertue of it: Therefore procure above the quantity of xx ℔. to be ſcraped, and put them above ſix weeks in Rain-water to ſteep, with ℔ iv. of Tartar in powder, to volatilize in a manner, the moſt firſt parts of the Wood: this time being expired, put the fourth part of this infuſion, with the fourth part of the Wood in a Still-body (or *Veſica*) and pour more Rain or River-water, till it comes $\frac{1}{2}$ foot near the brim; cover it with a Head, and give a gradual convenient fire, having fitted to it a pretty big Recipient, until the Water in dropping down appears to have no more of Oyl in it. We have ſaid it ſhould be a capacious Recipient, becauſe that little of Oyl which it yields towards the end would be loſt in new Recipients, whereas in a capacious Recipient, the laſt Oyl joyns and unites it ſelf to that which iſſued out before. But it is to be noted yet, that what doth diſtil ought to be ſomewhat warm, which is quite contrary to the common practiſe in diſtilling of hot and volatile ſpirits, for the Oyls muſt be ſeparated from their bodies by a ſtrong ebullition, driving the ſame upwards, and raiſing it with the aqueous vapours; but the heat muſt again be temperated, leſt the Phlegm ſhould aſcend in too great abundance with the Spirit; and moreover, whereas in Spirits the Water above the Worm muſt be kept very cool, it muſt not be renewed in the diſtillation of Oyls. We did purpoſe to ſet theſe two Notes at large, becauſe the obſervation of them is of abſolute neceſſity in the work. The Water muſt be ſeparated from the Oyl, which will be clear, fair, and yellow, and of a good ſmell : and thus continue your diſtillation till all be ended. This Oyl is excellent for perfumes outwardly : it may alſo be inwardly applyed, reduced to Sugar, Oyl, or *Elæoſaccharum* to diſſolve in its Water, or ſome diuretical Water, for the cleanſing of the Kidneys and Bladder from Slime and Sand ; it may alſo be uſed with very good ſucceſs in Gargles to abſterge and cure Ulcers in the mouth, and waſh and mundifie them in other parts of the body, and particularly in the parts appointed for generation.

To make the Extract of Nephritical Wood, or Lignum Nephriticum.

THis Wood is brought from *New-Spain*, is tender and dry, though heavy, by which it appears to be more Saline than Oyly, and therefore communicates eaſily its vertue to Water, which it dyes of a yellow-brown colour, in decoction appearing ſomewhat blewiſh in the Surface. We have choſen this Wood to ſhow its difference from others ; for although it be inodorous and inſipid, it is nevertheleſs endowed with much vertue, and expels powerfully by Urines, whether ſimply infuſed in cold Water to drink the colature thereof, or mixt alone with white Wine ; or whether a decoction be made thereof, which is very inſipid. In this manner it conduces very much to help thoſe that are troubled with the Stone, Gravel, or ſtopping of Water. But above all, it is conſiderable in decoctions, againſt the Pox and Scurvy, for it frees eaſily and powerfully the Patient from the venom of theſe two diſeaſes ; and, becauſe this Wood is not to be found every where, we have thought it neceſſary to teach the manner of its extract, whereby the Artiſt may regulate himſelf in all other Woods, which ſhall be of this kind. Scrape *lib.* vi. of this Wood, and make a decoction with Roots of *Reſta-bovis*, Hundred-headed thiſtle, or Sea-holy, *ana lib.* iij. and *lib.* j. of *Virga-aurea*, or Golden rod in *lib.* xxx. of River or Rain-water, till ½ be conſumed ; then percolate and expreſs it, and make a ſecond decoction of the cake remaining after the expreſſion in *lib.* xx. of freſh Water, then percolate and ſtrain it, and ſo continue until the decoction takes no more colour : which done, clarifie all the decocions, and run them through the bag, and evaporate it in a ſlow heat without ebullition, to the conſiſtency of a liquid Extract ; to which add the Salt extracted from the remains of your Extraction.

This Extract is an excellent diuretick aperitive Remedy, which may be exhibited from ℈ j. to ʒ j. in Broths, white Wine, or decoction of *Lignum Nephreticum*, when thoſe which are troubled with Gravel, Stoppings of Water, or Nephritical Colick are in the half Bath: but with this precaution, that they take before and render again a Turpentine Glyſter.

To make the Spirituous water and Oyl of Saſſafras.

THe Saſſafras Wood or Pavame comes from *Florida*, and differs yet much in nature from the above-mentioned Woods; for it is very odoriferous; and being never ſo little warmed by rubbing, it ſends forth Spirits which affect the ſmell with much pleaſure, and ſhows this Tree to be very pregnant and full of volatile Salt, whence it is evident, that it hath much vertue. The ſmalleſt is to be choſen for diſtillation, and muſt have yet its Rind about him, and if it were poſſible, ſome of the Root with its Rind; becauſe the Rind poſſeſſes more of the ætherial Oyl, or volatile Salt and Spirit, than the internal ſubſtance of the Wood, which is light and ſpongious, as the ſubtile and aromatical taſte of the Rind, reſembling that of Fennel, doth teſtifie: And as we ſaid, that the *Lignum Rhodium* muſt be opened to volatilize it; here we muſt proceed in a quite contrary method, for we muſt diſtil the Saſſafras aſſoon as it is cut in pieces, and that in a Still-body with Rain-water: but if you deſire to have an excellent Water, and little of Oyl, you muſt diſtil it with white Wine: but if you only aim at the Oyl which is very excellent, have only Water. The Oyl of Saſſafras ſinks in the bottom of the Water, as that of all aromatical Subſtances. The ſpirituous Water is excellent againſt all kind of obſtructions, and chiefly thoſe of the Spleen, which it alleviates more than any other remedy. It is alſo excellent for the Stomach, ſtrengthening the digeſtive heat, and correcting the crudity of aliments, it wonderfully helps the Wind Cholick. It is an infallible Sudorifick or Diuretick; for it will never miſs of its effect by the two natural ways, becauſe if the Patient will not admit of much covering, and that the ſweat by this means remains concentrated, the vertue of the medicament will never fail to ſhow it ſelf by Urins: becauſe the actions of Spirits and volatile Salts, can never be hindered; therefore is this ſpirituous Water very ſpecifick in venerial diſeaſes, as alſo in ſcorbutick diſpoſitions. The *doſis* of this remedy is from j. to ℥ vj. either by it ſelf or mixt in white Wine. The tincture which the Artiſt will draw from Saſſafras, with white Wine, in *B.M.* in a Blind-head, may legitimately be ſubſtituted to the ſpirituous Water, when he ſhall be in haſte and forced to make uſe of it : ℥ ß. of Saſſafras is enough for ℔ j. of Wine ; but the *doſis* muſt be double of the Water. Now as the Oyl is more ſubtile than the Water, becauſe it is only made of a little Sulphur very ſubtile, and all the remainder is only volatile Salt, ſo ought it alſo to be leſs : for it muſt not be exhibited, but from the quantity of iij. to x. drops, reduced to a diſſolubility with Sugar in powder, whether it be given in its own Water, that of Cinamon, white Wine, or Broth, for all the diſeaſes we have intimated here above : but above all, in difficult Travels of women, whether the Child be dead or alive: as alſo to expel the After-burthen, and purge the woman in Travel, without much griping : for this Oyl ſtrengthens the Womb, and makes it diſcharge with more eaſe, and in leſs time, thoſe ſuperfluities wherewith it was incumbred ſince Child-bearing. Finally, this praiſe may lawfully be given to *Saſſafras*, that it is a kind of *Vegetable Panacea*, ſince the Remedies extracted from it may be adminiſtred in all kind of diſeaſes ; and moreover its conſtant uſe may make either ſex fruitful, but chiefly the female kind ; for it heats, and ſoftly and naturally ſtrengthens all the internal parts; but chiefly thoſe that conduce to generation.

FINIS.

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FINIS.

A
Compleat Body
OF
CHYMISTRY:

Teaching the whole Practice thereof, by the moſt exact Preparation of *Animals*, *Vegetables* and *Minerals*, preſerving their eſſential Vertues.

By *Nicaſius le Febure*, Royal Profeſſor in Chymiſtry to his Majeſty of *England*, and Apothecary in Ordinary to His Honorable Houſhold, and Fellow of the Royal Society.

Rendred into Engliſh by *P. D. C.* Eſquire, one of the Gentlemen of His Majeſties Privy Chamber.

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CHAP. IX.

Of VEGETABLES, and their Chymical Preparation.

SECT. VIII.

Of Juyces and Liquors.

THE Juyce of Plants, which is their nutriment, has the ſame Analogy with Vegetables, as blood with Animals: Now as there are needleſs or hurtful ſuperfluities, reſulting from the elaboration and aſſimilation of the blood, when appropriated to the ſubſtance of Animals, ſuch as Excrements, Urine, Sweat, Fat, Slime, Stones and vitriolated Humors, Nitrous, Aluminous, Acide, Bitter, *ſharp* Juyces; and others alſo of a mixt nature, whereof the Animal diſburthens it ſelf, either gently and naturally, or violently; ſo likewiſe in

Vegetables, are found Juyces of ſeveral relliſhes, which Analogically do anſwer to theſe Excrements: ſuch as Oyls, Reſinous and clammy ſubſtances, Gums and Viſcoſities, tartarous and ſaltiſh Emanations. There is nevertheleſs this difference, that Animals have conveyances fitted and appropriated by Nature for the disburthening of their ſuperfluities: Which is not ſo in the Plants, unleſs we will attribute it to their poroſity, through which they do exhale and evaporate both good and bad ſmells, as the moſt ſubtile, fine and volatile part of their contents, the groſſeſt remaining in the body of the Vegetable; upon which account they need the hand and induſtry of the Artiſt to ſeparate and diſunite them. It ſeems nevertheleſs, that ſome of theſe Subſtances ſtrive naturally to free and ſet themſelves at liberty: For experience teaches, that as ſoon as ſome part of their rind is opened by inciſion, humors will flow from thence abundantly; and therefore obſerve four ſorts of Species: Firſt, The Aqueous Subſtances, which are Juyces or Water, as that which flows from the Birch-tree and the Vine; Secondly, The Terreſtrial, which are Gums; Thirdly, The Sulphureous, which are Oyls, Balſams, Reſins and reſinated Gums; Fourthly, Salinous ſubſtances, as Tartar and Sugar. But as all this we have ſaid, evidences thoſe ſubſtances to be natural parts of Plants; to each of whom we have alſo deſigned a peculiar Section, to teach the Chymical Apothecary what Operations he may perform upon the ſame: Our intention is to ſpeak in this preſent Section, of ſuch Juyces only as Nature and Art doth furniſh us with, *viz.* Wine, Vineger, and their Tartar: Opium, which is the condenſated Juyce of Poppy; and Elaterium, which is the Juyce of the Wild Cucumber: Theſe three Examples will ſuffice, becauſe there will occur enough in them whereby to ground our obſervations both upon the Theory of theſe matters in general, and the practice of their working in particular: And withal, to inſtruct the Artiſt in all other Operations analogical.

The Anatomy of Wine.

WINE, is the Juyce of the Fruit of the Vine, exhaled by fermentation, which by *Paracelſus* is call'd, The blood of the Earth, the juyce of the Prince of all Vegetables, the Sovereign Cordial; thought alſo by ſome to be the juyce of *Raymund Lully, his great Lunaria:* Others call it again, The Juyce of *Janu's Plant*, and of the great Vegetable: But leaving all theſe names, let us come to the Anatomy of the thing it ſelf, and of its parts. Wine then, firſt of all, does yield, by the help of Diſtillation, a moſt ſubtile and incorruptible eſſence, commonly called *Aqua Vitæ*, Burning Water, Spirit of Wine, Heavenly Sulphur, Bezoartick Vegetable Sulphur, Heavenly Menſtruum, Cœleſtial Water, the Heaven of *Raymond Lully*, the Philoſophers Key, an Æthereal Body conſiſting of Fire and Water, the Volatile Balſam of the Catholick or Univerſal Liquor, and finally the Quinteſſence of Wine. In the ſecond place, it yeelds in the ſeparation great ſtore of inſipid and corruptible Water, which is called its Phlegm. Thirdly, There cometh a certain fumous or ſmoaking Spirit, which is nothing elſe but the groſſer part of the volatile Salt of Wine, reduced into vapor, and aſcending under the form of a whitiſh ſmoak. In the fourth place follows a certain fat, unctuous and combuſtible Oyl, but in very ſmall quantity: And fifthly, From the thick and black ſubſtance left in the bottom, is extracted, a penetrating, ſubtile and fixed lixivial Salt after calcination. And finally, in the ſixth place, after the Salt is extracted, there remains a muddy, inſipid, and needleſs Earth.

We have ſaid, the Wine was made ſuch only by the help of fermentation, and therefore are bound to illuſtrate it by proof, which we hope eaſily to perform: ſince none that hath converſe with Wine can be ignorant, that Muſt, or Wine in the Muſt, was never Wine, and that no body gives it ever the name of Wine, but after Fermentation is ended: But there is another more Philoſophical proof, and more ſatisfactory to the mind of a Chymical Artiſt, who knows that all vvhatſoever is Wine, and is called ſo, yeelds its Spirit before the Phlegm; and that in the diſtillation of Muſt, improperly and commonly called Sweet Wine, before fermentation, there comes nothing but an inſipid meer Water, reſembling that of Rain; which is a convincing proof, ſince it falls under ſenſible demonſtration; for after the diſtillation is performed, there remains a pleaſant extract of a ſweet and ſaccharing taſte, containing in it ſelf the eſſential and volatile Salt of Muſt, and its Heavenly Sulphur, uncapable now of action, being too much reſtrained, and deprived of ſufficient humor or moiſture to reduce his power into act: But if you reſtore unto it a ſufficient portion of Water, and can dextrouſly introduce a ſpark of Oyl therein, by the help of ſome fit and appropriated Ferment, it vvill vvork again in a ſhort time, and make it appear, that his fermentation onely can perfect and make the Wine. For all the Maſs will ferment, and the Liquor by this means contract the taſte, ſtrength, pleaſantneſs, and all other perfections of Wine; by which it evidently appears, that Art is capable in ſome way to imitate Nature, and that amongſt all other Arts, Chymiſtry alone can attain to the Theory and practice of this Artificial Fermentation.

Now it is not enough to have deſcribed the ſix parts or ſubſtances which Wine affords in general, unleſs we come to its particular Anatomy: They that will pleaſe their eye, muſt take good Wine, clear defecated and ſubtil, of a generous and ſtrong Complexion, and diſtil it in *B. M.* in a great Glaſs Cucurbit, that they may the better examine, with the eye, which of all the ſubſtances ſhall aſcend: For vvhen the pure Spirit riſes, the Veins will ſcarce appear in the Still head, ſo ſubtil they are; and when they are totally deprived of Phlegm, they aſcend not in a ſtraight line, but are crooked and winding: But when the Phlegm begins to mix with them, they become more ſtraight and viſible, by reaſon of the weight of Water which more viſibly doth incorporate with them; When this comes to paſs, the Cucurbite or Glaſs-body muſt be expoſed to a Sand-furnace ſomething warm: But the moiſture muſt be wiped off from the Veſſels firſt, and a graduated fire adminiſtred, to perform thus the whole Anatomy of Wine, for the ſatisfaction of the Artiſt. But becauſe this proceſs is ſlow and tedious, and that the Laboratory of the Chymical Apothecary, ought to be furniſhed with great ſtore of Spirit of Wine of all ſorts, being the chief Menſtruum of all, and the more conformable to our nature, for the execution of the fineſt Operations; We think fit to deliver a more compendious and quick Method of diſtilling Wine; as a ground to explain afterwards all the proceſſes of work which may be done upon it, to render it uſeful to all Preparations whatſoever, which the ſame Art will take in hand.

To Extract the Spirit of Wine.

FILL up your (Veſica) or Glaſs-body, half a foot near to the mouth with a good ſtrong and generous Wine, well defecated; then cover it with a Head, and lute it, adminiſtring a ſoft and gentle fire, until the drops begin to fall, and the pipe of the Moonhead grows ſo hot, that your hand cannot reſt upon it without burning: Then ſtop the Furnace on all ſides, and keep the Water in the Tun (through which paſſes the Neck or Worm) very cool, guiding the fire ſo judiciouſly and ſo moderately, then whatever falls into the Recipient, may fall alwayes cold; for in doing ſo, you ſpare the trouble of a Rectification, becauſe Phlegm cannot eaſily aſcend and mix it ſelf with the Spirit, when the heat is well proportioned and fitted to the work: The firſt Spirit drawn, muſt ever be laid by it ſelf, as the moſt pure and moſt ſubtile; and the diſtillation continued, until the diſtilling Liquor grows inſipid: This Phlegmatick Spirit which comes laſt, muſt be mixed again with the next Wine you are to diſtil, and ſo proceed until you have a ſufficient quantity of Spirit, or *Aqua Vitæ* drawn, to ſupply a rectification in the ſame Glaſs-body; But now in this part of the Operation, above all things the fire muſt be heeded, and skilfully govern'd, and cold Water timely ſupplyed and often changed, becauſe it will eaſily contract heat, the vapors of theſe fiery Spirits being much hotter than thoſe of groſs bodies. That which remains after the diſtillation of Wine, muſt not be thrown away; but on the contrary, evaporated to the conſiſtency of a black and clammy extract, much like unto Pitch, which muſt be diſtilled in a Retort, with open fire, and thence will come forth an acid and ſharp volatile Spirit, and a black and pondrous Oyl, all participating much of Empyelum, and having a ſtrong fiery ſmell, what remains in the Retort, muſt be calcined in a Crucible, or a glaſed earthen Pot, until it comes to a perfect white; then lixiviate it, and filtrate, evaporate and dry to a Sun, which is to be reverberated in the Crucible unto redneſs, without putting nevertheleſs the matter therein contained in Infuſion; then expoſe it to the Air to diſſolve it, and ſubtilate the parts thereof; and ſo will it diveſt it ſelf with many more viſcous and clammy feculencies that are to be ſeparated afterwards by alteration; then evaporate or ſeparate the Water from this Salt again upon Aſhes, and being dry, gloom it in a Crucible without melting, and expoſe again to the Air until diſſolution; then filtrate, evaporate and dry again, and ſo proceed reiterating till ſeven times, or what would yet be better, until the Salt leaves no more feculencies in the filtration; and that when you ſhall extract the moiſtneſs of the diſſolution in *B.M.* to the fourth part, you have a clear chryſtalline white and tranſparent Salt: Then may you confidently boaſt you have a *true Salt of Wine*, which to a diligent, curious and knowing Artiſt, may ſerve as *a Key to open all natural Bodies*, after the ſame hath been acuted with its Spirits, and made capable to fly and aſcend with the ſame: For then will they not only penetrate into the bodies of Vegetables and Animals, but even alſo will act upon Minerals and Metals, provided they have been firſt deſtroyed and made fit to be extracted by this noble Menſtruum, which we above all things do recommend to ſuch as have a deſire of ſucceſs in Chymical Operations.

To Prepare the Alkool of Wine.

THE Chymical Laboratory, which is the true Shop of a good Apothecary, muſt be furniſhed with ſtore of very ſubtil and very pure Spirit of Wine, whom the Authors uſe to call *Alkool of Wine*; and as it requires both time and ſtore of charges to bring to perfection, I have given the Model of a Veſſel capable at once, and with eaſie charge to perform this Operation, without the trouble of ſo many reiterated diſtillations, which to do the work exactly were neceſſary before this uſeful Invention; becauſe the Veſſels wherein the cohobations required for rectification and alkoolization were made, being too low, it cauſed the Phlegm ſtill to be more with the Spirit; but in this Veſſel of Invention, it is impoſſible the Phlegm ſhould ever aſcend, let the heat of the fire be given never ſo great: As it is evident in the latter end of the diſtillation of the Spirit of Wine made in your Veſica or Still-Glaſs-body; for when the Phlegm begins to overpower the Spirit, being in greater quantity, the heat of the fire muſt be encreaſed in a double, yea a treble proportion, to cauſe the remaining Spirit to riſe, which is in nothing inferiour in purity, quickneſs and ſubtility to the other that firſt aſcended, as it is made evident by experience, and by the proofs and notes of its perfection: Which are, That this Spirit being ſet on a flame in a Silver Spoon, or of any other Metal, it flies and conſumes all away without leaving ſo much as a drop of Phlegm, or ſign of moiſture in the bottom of the Spoon. The ſecond note is, That a piece of Paper or Cotton, or Rag of Linnen being dipt in this Spirit and ſet on a flame, it doth not only all vapor and conſume away, but moreover enflames and kindles the body which firſt it had moiſtned, provided it has been well dryed before. The third and the beſt note, and an infallible one, is, when the fineſt Gunpowder well dryed is moiſtened and imbib'd with the Spirit; if you ſee it on a flame, it will at laſt conſume alſo the Powder; for then it is a true concluding ſign, that no portion of Phlegm remains mixed therein: For did there remain never ſo little, the Gunpowder would never take fire; wherefore this Operation ſaves much time and labour: For when all the Spirit of what was put by the Artiſt in the Glaſs-Still body, is aſcended, let him only fill a crooked Pipe or Spoon with Water, and inſert it in the Veſſel by the ſmall Channel it has in the ſide, and thus ſhall he empty the Still-body to the very bottom, without being put to the trouble to take off the Lute of any part of the ſtructure of the Veſſel, and by the ſame Channel or Conduit may fill up again the ſame Glaſs-body with new *Aqua Vitæ* by a Funnel, and ſo may he almoſt continue unapbruptedly day and night his work without any trouble, provided he takes care to ſupply the fire as it ſhall waſte and conſume away. And if the Artiſt ſhall propoſe to make yet a more ſubtil and refined Spirit of Wine, more penetrating and active then the former, let him put in the bottom of the body of our Veſſel or Engine of Sal □, very dry, and pour upon ſome rectified Spirit of Wine, luting all the Joynts after commiſſures of the Veſſels with a Hog or Neats Bladder, dipt in white of Eggs well beaten, then adminiſter the fire until he has drawn again all the pure Spirit, which will have a more pleaſing taſte and fragrancy then the former, and be very apt to make therewith thoſe impregnations and imbibitions of Salt, whereof we have ſpoken here above, as alſo for the extraction of many fine and excellent Tinctures. There are ſome which call this Spirit ſo alkolizated upon Salt of Tartar, *Tartarizated Spirit of Wine*, but very improperly: For the true Spirit of this nature can be no other, then that through which has been wrought the moſt ſubtil pure and refined part of the Salt of Wine: Which is a very painful Operation, and deſerving rather the care and induſtry even of the moſt conſummated in the practice and myſteries of Chymiſtry, then the impatience and unskilfulneſs of thoſe which are but Novices and young Practitioners in the Operations of this noble Art.

It remains only we ſhould ſpeak now of the great and wonderful vertues of this noble Spirit, which can never be commended or praiſed enough by any body; howſoever ignorant Bablers, who are not acquainted with it, may ſpeak to the contrary: for it's a moſt penetrative and incorruptible Spirit, potently reſiſting to putrefaction, and to all injuries of cold and froſt: and, I let you judge and conſider, whether there muſt not be a capacity in this Spirit to preſerve living bodies and their parts, being duly and judiciouſly adminiſtred; ſince it preſerves dead bodies; whereof thoſe which keep therein for ſeveral years abortive Fætus's may be ſufficient witneſſes; as likewiſe Surgeons, who ſo uſefully and ſucceſsfully apply it for ſtopping the progreſs of Gangrenes and other accidents tending to corruption of the parts of the Body. It revives and awakes the vital and animal Faculties: and therefore produces ſometimes ſurprizing effects in Apoplexies, Lethargies, Epilepſies, and all other ſoporiferous affections of the body, where the paſſage of the Spirits is obſtructed by ſome groſs clammineſs and viſcoſity ſtopping the Sinews, which are the Organs of Senſe and Motion: for this Spirit penetrates in a moment even as Light, diſſolves and eats whatſoever was the cauſe of obſtruction, and cauſes life and all its functions which were as buried and ſuffocated, to ſhine and appear again; but if it has any conſiderable virtues in internal applications, it ſhows no leſs eſtimable ones in external: For by its fiery and Celeſtial quality it diſſipates and reſolves all cold and ſchirrous Tumors, opens the Pores, and drives or exhales the windy Vapors, which ſometimes are raiſed between the ſpaces of the Muſcles, cauſing very ſharp pains; it hinders the coagulating of the blood in all manner of Contuſions, and ſo prevents all manner of accidents which commonly uſe to follow them; as ſwelling, pains, corruption of the extravaſated blood, which of neceſſity, without this help, muſt putrifie, and would afterwards come to ſuppuration, were all thoſe ill conſequences and ſymptomes not hindred by this Spirit. But above all, this Spirit is a wonderful Specifick againſt all manner of burnings, the grief whereof it allayes, and takes away the wild-fire from it, with ſuch a ſudden help and quickneſs, that no penetration or ill impreſſion can happen in the parts offended where it is applyed, not even ſo mucch as bliſters or riſing puſtula's in the fleſh; provided it be put upon before the skin begins to peel off, and before any other Remedy be made uſe of. But I want words further to expreſs the worth and virtue of this Heavenly Balſom; Wherefore, I leave the reſt to the experience of ſuch as will make uſe of it; which I may ſafely, and on my Conſcience aſſure, that they ſhall never be deceived in the uſe thereof.

But as the Young Artiſts might eaſily miſtake, and equivocate in the rare appellation of Spirit of Wine alkoolizated, which for abreviations ſake is writ *alkolized*, confounding it with Spirit of Wine *alhalized*, it is neceſſary to ſhew wherein they differ, and to teach the way how to prepare the laſt in a more exact and artificial way then any hath done hitherto: But before we come to the deſcription thereof, we will ſhew the difference between them both; which conſiſts in this, that Alkolized Spirit of Wine, is nothing elſe but the ſaid Spirit pure and diveſted of all Phlegm, as we have deſcribed it above: But Alhalized Spirit of Wine, is a Spirit impregnated with its own Salt, which is prepared two ſeveral wayes: the firſt by the help of its eſſential Salt, which is Tartar, and this cannot very properly be called Alkalized, becauſe *Alkali* ſignifies a fixt Salt made by calcination; but when the Artiſt has attained the skill to impregnate the Spirit of Wine with its Alkali, it is then properly that he may call Alkalized Spirit of Wine: for that which is prepared with Tartar, is more conveniently named Spirit of Wine acuated with its own Tartar, or Tartar ſated. I cannot bury in ſilence the error of thoſe who pretend by a ſingle diſſolution to unite the very pure Spirit of Wine, and its purified Alkali together, to make therewith their Alkalized Spirit of Wine: Since thoſe that are acquainted with the nature of Salts Alkali, and that of Alkohol of Wine, know that they work not one upon the other, if the Salt be very dry, and the Spirit very pure, but if the Salt participates of the leaſt moiſture, or that in the Spirit there remains yet any ſmall portion of Phlegm, then will there happen ſome ſmall diſſolution of the Salt; but there will be no union made of either with other, becauſe they are of a quite different nature, the one being æthereal and combuſtible, the other a Salt diſſoluble in Water: Thoſe that know what belongs to true Chymical Philoſophy, can be competent Judges of what we have ſaid, and will confeſs, that not without reaſon, we have inſiſted a little on the elucidation thereof, not to prejudice the Chymical Artiſt.

How to Prepare the Tartarized Spirit of Wine.

℞ ℔ ij. OF Spirit of Wine of the firſt diſtillation, pour it in a Glaſs Retort, wherein you have put ℥ i. ☿ very pure and clean reduced to a groſs pouder, put your Retort *B. M.* filled with moiſtned ſawings of Wood, and onely four fingers high of Water in the bottom, the vapor whereof will gently entertain the heat and moiſtneſs of the Saw-duſt: Adminiſter moderate and ſoft fire, that the drops falling into the Recipient, vvhich muſt be exactly luted, may follow gently one another and without heat; ſo that between the falling of each drop there may be an interval of four pulſations or beatings of the Pulſe, or telling ſlowly four; as ſoon as the Phlegm is perceived to come forth, you muſt give over: and if any ſhould happen to have aſcended vvith the Spirit, it muſt be ſeparated by Rectification. This Operation muſt be thrice reiterated, taking ſtill ℥ j. of freſh ☿. and obſerving the ſame degree of heat: To conclude, Deſiccate well the ℥ iij. ☿. which you may uſe oft in your diſtillation: Put your diſtilled Spirit in a Retort, and add to it thoſe ℥ iij. ☿. reduced to pouder, and above all things well dryed; fit immediately to it a Recipient, and lute it exactly; then diſtil in Aſhes ſoftly, until you ſee the drops ceaſe to fall; then by degrees encreaſe the fire, even until nothing more will come forth; then ſhall you have the tartarized Spirit of Wine, or acuted with its Tartar, being an Operative and Diuretick Spirit, but above all a moſt excellent Menſtruum for the extraction of ſeveral noble and uſeful Medicinal Tinctures. And you are to note, that on the top of each of theſe diſtillations, there will ſwim a ſmall portion of Oyl, which muſt be taken off every time, becauſe it is *the true Eſſence or Oyl of Wine*, and a very high Cordial. But if you will have a Spirit yet more penetrating, more active and more ſubtil then this laſt, calcine your Tartar remaining after theſe diſtillations, with ℥ xij. more of very pure ☿. in an earthen glazed Pot with a circular fire, or (△ *rotæ*) until it has contracted a mixture of blew, white and red Colour; and whilſt it is yet warm, beat it to pouder in a brazen Mortar heated, with its Iron Peſtle; and immediately throw the pouder in a double Veſſel, and by little and little impregnate or imbibe it with your tartarized ſpirit of Wine; and when the Spirit hath ſufficiently penetrated all the whole Maſs, pour on more to the height of four or five fingers: Then ſtop the necks of your double Veſſel where the joynts meet, and lute them very exactly with a Bladder, whites of Eggs and quick Lime, and place your Veſſel to digeſt in *B.M.* with Saw-duſt, the ſpace of ſix weeks, in a moderate heat, imitating that of mans Body: This time being over, take away the upper part of your double Veſſel, and apply nimbly a Chapital or Still-head, which luted, continue the fire, but of ſomewhat ſtronger a degree, and diſtil the Spirit from it till it leaves the bottom dry; then about the end give a very quick fire, and you may then boaſt of having a *tartarizated*, and in ſome kind an *alkalized Spirit of Wine*, of a ſweet and pleaſing fragrancy, reſembling that of the flowred Vine; becauſe the internal Sulphur of the calcined Salt has in a manner dulled and deaded the edge and quickneſs of this Spirit, which is very effectual to draw the Tinctures, and make the extracts of all Purgatives, whoſe unripeneſs it corrects with all other peccant qualities, digeſting the ſame, and altering for the beſt, by the help of that Celeſtial fire which it conceals and poſſeſſes in its Entrals: Whence proceeds alſo the vertue it has to preſerve the vigor and faculties of all Animals, Vegetables, Minerals and Metals. It is one of the great Arcana's in the practice of Phyſick, and chiefly in tartarous Diſeaſes proceeding from Obſtructions of a fixt and tenacious Salt, form'd in the Entrals, becauſe in the concoction the ſtomach is deſtituted of that ſubtil, volatile and energetick Spirit, which is capable either to expel them by inſenſible tranſpiration, or eject them by Urine and Sweat: whence it comes to paſs that this Spirit is of a ſoveraign efficacy in Scorbutical and all other Diſeaſes of the Spleen and Hypocondrical Affections, or Aſthma's or ſhort breath, and Cachexye or depraved diſpoſition of the Entrals. It cauſes alſo ſleep, adminiſtred with a little of the Tincture of Saffron. The Doſis is from ℈ ij. to ʒ j. in Wine, Broth, Decoctions, or any other appropriated Liquors according to the intention of the Phyſitian; we leave all the other Preparations which may be made of Wine and of its Spirit, to the examination and curioſity of the Son of Art; holding it ſufficient to have inſinuated all the neceſſary Methods, from which we may fetch the Rules of not erring in his beginnings and firſt preparations, as alſo the Method of attempting further, when he ſhall have a mind to ſatisfie himſelf about any remarkable Operations, which he ſhall meet with in the moſt famous and celebrated Authors.

Of the Anatomy of Vinegar.

THE name of Vinegar doth ſufficiently evince that the Subject of this work muſt be Acid Wine; but uſe has prevailed that the name of Vinegar ſhould be given to all Acid Liquors, made out of Beer, Cider, or Perry: But in all Chymical Operations, Wine-Vinegar alone is to be uſed, being the moſt excellent of all other Vinegars, becauſe it proceeds from an alteration of the Prince of Vegetables, which abounds moſt in Vitriolick and Acid Salt, which is its Tartar: And when the Wine is robbed and deprived of the pureſt part of its ſpiritual and igneous Sulphur, then the predominant Tartar changes all the remaining Liquor into Vinegar: A ſpeculation of very great importance, and very well worth conſideration; for *Paracelſus* makes uſe in his Books of *Archidoxa* of the compariſon of the Sphere of Activity of Venegrifical Ferment (if I may uſe this barbarous word) to prove the ſtrength and vertue of tranſmutative Tinctures: And the Learned *Van Helmont* cannot find a better proof for the ſecret action and hidden intrinſecal power of Fire, Light, and the internal Ferment of mixt bodies, then by comparing that Ferment with the leaves of Bread, and the Ferment of the Stomach: But moreover, he relates a ſtory concerning the ſtrength and power of Spirits impregnated with the Ferment of Vinegar, which is that, if you fill with River Water a Cask of Oak very dry, where for ſome time has been put good Wine-Vinegar, and expoſe the ſame to the Beams of the Sun, during the heat of the Dog-dayes, then the fermentative Spirit of Vinegar ſhall tranſmute and change by his Magiſterial tinging and tranſmutative vertue, all this quantity of Water into Vinegar; a thing that will appear very poſſible if we reflect upon this, that one pound or two of Dough, having in it the principle of Leaven, are capable to turn a hundred pound of wrought Dough, not only into Leaven, but to convert them alſo into Spirits Animal and Water. Now the Cask is made of Boards or Planks of Oak, which is a Tree altogether of a vitriolick nature, and whereof by diſtillation a very potent,acid or ſharp Spirit may be drawn; but that which is the chief of all, is, That the Pores of this Wood are filled with the moſt ſubtil parts of the Spirit, and Salt of the Vinegar, which it contained before, which retains ſtill in, and with it ſelf the Character and power to convert into Vinegar all ſuch Liquors as be put in the Cask, provided it be aſſiſted with the Suns, or any other conſtant and continued heat that may ſupply its room and office. But that which he notes of more wonder, is, that this Vinegar of Water was all Spiritual; for whereas the Vinegar of Wine, ſends forth in the diſtillation his Phlegm firſt of all, and yeelds but towards the end his Spirit: The Vinegar of Water contrariwiſe,doth ſtill ſend forth and yeeld Spirit equally from the beginning of the diſtillation to the end, and ſtill with the ſame ſtrength and diſſolutive virtue.

The manner of Diſtilling Vinegar.

CHUSE of the ſtrongeſt and beſt Vinegar you can meet with, and put it in glaſs bodies or Cucurbits till they be half full; then cover them with their heads, and place it in Sand, making but a plain lute with a filter of wet Paper: then adminiſter the fire, and the firſt thing that ſhall aſcend will be the Phlegm, which is an evident proof that Vinegar is nothing elſe but a Wine, which the ſalt and acid Spirit prevailing over the æthereal and ſubtil Sulphur,hath fixed. From time to time you muſt examine the taſte of the falling drops, that you may change your Recipient as ſoon as the drops ſhall grow acid; and ſo drive the fire with an equal heat until all the Spirit of the Vinegar be drawn, which commonly is called *diſtilled Vinegar*: You muſt note to ceaſe the fire when there is but little of Vinegar left; otherwiſe that which is in the bottom of the Cucurbit would burn, and ſo communicate an ill empyrematical ſmell to the Spirit of Wine: But to prevent this accident, warm Vinegar to pour again into the Cucurbit, which may be done for three ends. Firſt, To exhale and vapour away ſome part of the Phlegm of Vinegar. Secondly, To hinder by the heat, that the Glaſs-body ſhould not break. And in the third place, That the new Vinegar may diſſolve the groſs and feculent one which is in the bottom of the Cucurbit; and ſo ſhall the diſtillation go on without contracting any Empyreuma, and loſing any time or heat of the Furnaces. But they who intend to make a very ſtrong Vinegar for metallick Operations, have no need of all theſe precautions, becauſe it is even neceſſary to drive the Salt which is found in the remainder of the Vinegar into a Spirit, to make it penetrate the better into the Bodies or Calpes of Metals: Wherefore there ought to be no fear of heightning the fire towards the end, until all the reddiſh fumes or vapour be over, with this caution nevertheleſs, that the Veſſels muſt be well luted, which are to ſuffer ſuch violent fire, becauſe the laſt Spirits are very penetrating and ſubtil; and as diſtilled Vinegar is a Menſtruum of much uſe in Chymical Operations, ſo is it requiſite that the Artiſts Laboratory be well provided with theſe three kinds, *viz.* Acid Phlegm, Spirit of Vinegar without Empyreuma; and this laſt driven with the intenſeſt fire, that he may be ſtill ſupplyed wherewithal both to prepare Remedies, and ſatisfie his Curioſity in Philoſophical Tryals and Experiments, which daily he is invited to make for the ſatisfaction of his mind, and to prove whether his reaſoning is anſwered by ſucceſs, and know whether all what we have delivered by Authors is true or falſe. Diſtilled Vinegar hath no very great uſe in Phyſick, unleſs applyed as a diſſolvent for the preparation of other Remedies; or to make Syrups, as we have ſaid above; or to prepare Bezoartick Vinegars, and Remedies againſt the Plague: For it is endowed with an inciſing and attenuating Vertue, and therefore is Diuretick, Aperitive and Sudorifick; it is even Alexiterial, and cures the biting of Serpents, becauſe it kills, by the ſubtilty of its acid Spirit, the volative Salt of the Spittle and Venom of theſe Creatures: It produces the ſame effect on tart, hot and corroſive Gums, and all condenſated Juyces which are deemed venomous and of a dangerous quality: Wherefore it is employed by Chymiſts, as the true Correctives of Remedies prepared therewith.

To Prepare the Radical or Alkalized Vinegar.

℞. ℔ v. or vj. ℔. OF very ſtrong diſtilled Vinegar well dephlegmated, wherein you ſhall diſſolve ℔ j. of Chryſtals of Vinegar, which are nothing elſe but its own Tartar well purified, which by ſome is called *its Eſſential Salt*, and by others *its Volatile Salt*, but improperly enough: Digeſt them together for the ſpace of fifteen dayes in a double (or circulatory) Veſſel in the heat of a vapory Bath, in Saw-duſt or minced ſtraw, which done, put all in a Retort, and diſtil upon Sand till it be dry, augmenting the fire towards the end, that the ſpirits of this ſubtil and acid Tartar may be joyned to the diſtilled Vinegar; Calcine to whiteneſs the remaing matter in the Retort, and add to it ℔ ij more of *Mercury* very well depurated; put all theſe calcined Salts in a Retort, and diſtil your Vinegar thereupon ſo often by reiterated cohobations in Sand-fire, that the Spirit of Vinegar may incorporate and carry along with him the greateſt part of the fixed Salt, which for the moſt part is not performed until the eleventh or twelfth cohobation; ſo ſhall you have a true Alkalized Vinegar, fit to diſſolve in a very ſhort time all manner of Stones and Shells: As likewiſe to extract and penetrate the bodies of all Minerals and Metals; They that will be at the trouble to prepare it ſo, and uſe it dexterouſly, will find out more and more to how many rare effects this Spirit is conducing.

Another very ſubtil Spirit of Vinegar.

DISTIL in *B. M.* ℔ xv of very good Vinegar well depurated, and extract ſhortly thereof about ℔ xij of Phlegm; put the remainder in a Retort, and diſtil upon Sand with a graduate fire until the remaining matter be very dry; then cohobate the ſame Spirit drawn off upon his own feces four or five times; after which make a Paſte of ℔ ß, of the Chryſtals of Tartar of the Vinegar, ℥ iiij. of Sal. ♀. with ℔ ß of Bolus reduced to pouder, a little of very good deſtilled Vinegar; and having made this Paſte into Pills of a fit bigneſs to be put in a Retort of Glaſs or Stone Mettal; place it in a cloſe Reverbatory, and fit thereto the Recipient, wherein lies the firſt diſtilled Vinegar joyn'd with its Chryſtals by cohobation, and give a gradual fire until all the Spirits are driven out by the ſtrong expreſſion of the fire: After all is cooled, open the Veſſels, and rectifie your diſtillation in a Sand-Furnace; and thus ſhall you obtain a Spirit of Vinegar not inferiour to the foregoing; but contrariwiſe yet more ſubtle, and conſequently more capable of performing all the effects hoped for.

How to Prepare the Chryſtals of Vinegar, or its ſubtil Tartar.

EVaporate in the Vaporous heat of *B. M.* xj or xij pints of ſtrong Vinegar very pure and defecated, until it has attained a conſiſtence of decocted Honey: Then put it in a cold place or Cellar to ſhute Chryſtals, and draw after ſome time the Liquor which lies under by inclination, letting it run ſoftly, until the Chryſtals be quite ſeparated: The remaining thick and blackiſh Liquor diſſolve in acid Phlegm of Vinegar; then ſtrain it through a Hoſe to defecate it; then again evaporate the Liquor ſtrained in *B. M.* to the ſame conſiſtence as you did before, and let it ſhute again Chryſtals for a ſecond time, and ſeparate the ſuperfluous reſidence, fit for nothing elſe but to be calcined with Tartar, to draw the Salt thereof; then put your Chryſtals together, and diſſolve in a ſlow heat of *Balneo* in a ſufficient quantity of good diſtilled Vinegar; filtrate the diſſolution warm, then put it in the cold to ſhute Chryſtals; and ſo continue this Work of Evaporating and Chryſtalizing, until you have extracted all the eſſential Salt; which you muſt diſſolve, filtrate, and chryſtalize in this manner three or four times, that you may have it very clear and depurated. This Salt is uſeful to make the true Radical Vinegar: And moreover, it is a very pure and ſubtil Tartar, which may be given in Broths, to cleanſe the ſtomach from viſcous and clammy impurities, lying in its bottom and about the ſides of it, by which the appetite is called away: It is alſo good to open, diſſopilate and cleanſe the paſſages of Urine, which it provokes gently, as it doth ſweat alſo: The Doſis is from ℈ ß, to ℈ ij, and ℥ j.

Of Tartar, and the Preparations Extracted from it.

PARACELSUS and his followers have ſo much made mention of Tartar in their Writings, that it is enough to confound the mind of their Readers, becauſe they make no diſtinction between Microcoſmical Tartar, Tartar of Aliment, and Tartar Remedy. We will then ſuccinctly explain the difference which is between them, to eaſe the ſearch and labour of the ſtudious Son of Art.

Tartar, in the *Paracelſian* Phyſick, is called, whatſoever is capable to coagulate in the form of a Stone, or is already ſo coagulated: But neverthele ſs, by Microcoſmical Tartar, or that which is ingendred in Man, called *Microcoſm*, or *Little World*, is to be underſtood a viſcous and clammy matter, which by want of digeſtion is framed in our bodies, and has in it ſelf an immediate or proximate vertue of hardning and coagulating, and conſequently of cauſing obſtructions, by reaſon that it wants a fermentative Spirit, capable of driving them by the natural paſſages and emunctories, from the center of the Body towards its circumference, and from thence to expel them ſenſibly or inſenſibly by the Pores: The defect of tranſpiration being the cauſe of the moſt part of internal Diſeaſes no leſs then external.

For the evils and accidents, whereof the Root or Seminary lies within our ſelves, ought not to be imputed to the vice of Aliments, as the moſt Learned *Van Helmont* doth very well prove in his Tract, entituled, *Alimenta Tartari inſontia.* Now the *Paracelſian* Opinion is the cauſe why the name of Tartar has been given to the Terreſtrial and Eſſential Salt, which is extracted from ſome Plants; whether it naturally ſeparates its ſelf from their Juyces, or whether it be performed by Art, we have declared above in the beginning of the Chapter of Vegetables, the manner of ſeparating the Tartars or Eſſential Salts of Plants; But as we can but intellectually conceive the help of Reaſon, and comparing things together; the manner of that which is ſeparated naturally by its own internal working, we will declare our conceit thereof, agreeing with the moſt judicious Authors.

The Artiſt to apprehend and conceive the better, the original of Tartar whereof we are to ſpeak, ought to call to mind, that the Principles of things are but crude and undigeſted in their original, and as it were but crude and homogeneal in this diſpoſition of their Chaos: But afterwards by maturation, there is a ſeparation made of the groſs parts from thoſe that are more pure and ſubtil: The groſs parts naturally do encline to the Elementary ſtate, which is Aqueous and Terreſtrial; but thoſe that are ſubtil do exalt, and to ſpeak more properly, ſpiritualize themſelves by the power and ſtrength of their internal Principle or *Archeus*, which contains in its ſelf the Ferment and Spirit, by whom they are alſo reduced to the other elementary ſtate which is Æreous and Fiery, that is to ſay, participating of the Æthereal and Celeſtial Nature. Which Philoſophical conſideration, if it may be ſuitable to any Subject, it cannot be applyed more lawfully to any thing then to Wine: For when the Muſt is newly drawn off from the Grape, it is a true Chaos, until the eternal *Archeus* or Principle hath raiſed up and excited the Fermentative Spirit, which cauſes the ſeparation of the ſubtil parts from the groſs, and ceaſes not from its work until it has brought the ſubſtances into which it works, to the higheſt pitch of their natural Predeſtination, which is the fiery and Celeſtial part of Wine: And that which is groſſer, doth return as by a Reinundation to that aqueous, earthly and ſaline nature which creates Tartar, which is an eſſential, permanent and incorruptible Salt in its ſelf, but on whom Art and Fire may imprint ſeveral alterations, becauſe it contains very rare and remarkable Vertues, of near reſemblance to the nature and power of

Spirits, by the help of its Salt and Sulphur, which it poſſeſſes abundantly. But let us now from this Theorical Speculation, come to the practice, by which we are inſtructed in the manner of purifying Tartar, its Diſtillation, Salſification, and the Extraction of the Tincture of the internal Salt of its Sulphur.

The Purification of Tartar.

TArtar may be purified by a ſimple waſhing of warm Water to take away the ſalt and terreſtrial dregs which it alwayes hath in its ſelf, and by which it is ordinarily aſſiſted and accompanied in its coagulation: To perform then this Purification, beat to pouder either German Tartar, or Tartar of *Montpellier*, and having put it in an earthen Pan, pour on it ſome Water a little more then luke-warm, half a foot high, then ſtir it with a Peſtle that the Water may take the ſubſtance and muddineſs of the Tartar, then let the fallen parts ſettle again, and pour out the Water by inclination, and reiterate three times this Lotion with warm Water, and thrice with cold; and ſo ſhall you have a Tartar ſomething pure, which you may uſe well enough in Decoctions, Infuſions or Macerations where there ſhall be need, either for ordinary work, or ſome preſcription of the Phyſitians. But this way of Purifying is too courſe, and ſavours rather common and vulgar Pharmacy then Chymical, which ought totally to ſeparate purity from impurity: The Artiſt then ſhall thus proceed, to make what they call *Inſhops*, *Chryſtals* and *Cremor Tartari*, which to ſpeak properly, are nothing elſe but well purified Tartar, beat to ſubtil pouder ℔ xxx or xl, of good *Mercury* well ſhining and gliſtering in the breaking thereof, compacted, Chryſtalline and weighty: boyl ℔ CC of Rain, or good and pure River Water, in which throw the ☿ by degrees, and it will ſoon diſſolve therein: Then preſently ſtrain that Liquor through two great Hypocras Bags, hanging over ſome great Tub very well cleanſed; and when all hath run, ſtir continually the ſaid Liquor with Peſtles until it be totally cooled, then let it reſt, and two hours after you ſhall find that the pure and fineſt Tartar ſhall be ſunk in the bottom of the Tub in the form of an impalpable and ſhining Pouder, which may without ſcruple be uſed inſtead of the Chryſtal, or what improperly is called *Cremor Tartari*, becauſe ſome have ſuppoſed that the Cruſt which remains on the top of the Liquor after it is drawn, was of a more ſubtil quality then the Chryſtals which are found in the bottom, or ſtick on the ſides of the Veſſel, though it be the ſame thing; ſince that Cruſt, or pretended *Cremor*, is nothing elſe but the coagulation of the purified Tartar in the ſuperfices of the Water by the cold Air. But above all this, there is yet one ſtronger Reaſon, why this Tartar thus purified ſhould be preferred to the Chryſtals or *Cremor Tartari*, which is ordinarily found in the *Drugſters* and *Grocers* Shops, which is that thoſe, who purifie the Tartar in places where it is plentiful and cheap, do put in the Water, which muſt diſſolve in Quick-Lime with their Tartar, and that for two reaſons; The firſt, Becauſe the Tartar ſhould ſooner and more eaſily be diſſolved; The ſecond, That the Lime may precipitate to the bottom, and draw along with it ſelf all the Feces, and clammy Viſcoſities, which cauſe the impurity of Tartar, and hinder the Chryſtals to become either ſo white or ſo pure; But in uſing this Method, they do not conſider the great harm which may proceed, and proceeds from thence daily: For beſides that time doth in ſome manner fix the eſſential Salt of the Tartar, and makes it leſs eaſie to be diſſolved in Broths and other Liquors; it doth beſides imprint into it a noxious quality which offends the Stomach, and heats extraordinarily the Breſt, and is prejudious to the whole habit of Body of thoſe that uſe often to take it; ſo that the good intention of Phyſicians is not followed: For whereas they intend to preſcribe an Aperitive and Diſopilative Remedy, it proves often to be coagulating and fixative by reaſon of the Petrifick Idea, which is unſpeakable from the Salt of Lime mixt and united with that of the Tartar. But this I only ſay by the by, That the Apothecaries may themſelves take the pains to prepare their Remedies, whereof they are accountable unto God, the credit of Phyſicians, and to their Neighbours.

The *Vertues of this Purified Tartar*, are firſt and chiefly to diſſolve and attenuate the groſs and tartarous Humors, which cauſe the obſtructions of the firſt Region of the Belly: Wherefore it may be uſefully adminiſtred alſo to open thoſe of the Liver, Spleen, Meſentery, *Pancreas* and Kidneys; above all things it is to be recommended in Diſeaſes proceeding from Melancholly, and all Hypocondriacal fits & affections: All Authors ſeem to agree in affirming that it is an Univerſal Digeſtive; and for this reaſon make it ever a fore-runner of Purgation, to attenuate and prepare that which by the Purgative muſt be evacuated. It is alſo a very convenient Remedy for all ſuch as are naturally cauſtick and cloſe in their bodies; for it will open and gently looſe the Belly, without offending either the Stomach or digeſtive Faculty; The Doſis is from ℈ i, to ʒ i, or ij, in Broth, or ſome aperitive or digeſtive Decoction. But becauſe this

Remedy is deſtinated to open the Obſtructions of the Spleen and Liver, and that Iron or Steel, is one of the choiſeſt Specificks which may be made uſe of for this purpoſe; Chymical Artiſts have found a way to unite and aſſociate the Steel and Tartar together, by their Reciprocal Action working one upon the other in their diſſolution, which is thus performed.

To Prepare the Martial or Chalybeated Tartar.

℞ ℔ j of the purified Tartar, in the manner as we juſt now have taught; with which you ſhall mix ℥ ij of cleanſed filings of Needles: Boyl in an earthen glazed Pot ℔ viij of Rain Water very clear, or rather diſtilled; and pour in it ſoftly the mixture of Tartar and Filings; and let them boyl together as long as you would to make a ſoft Egg; then run it through a Woollen Strainer, and agitate the Liquor until it be cooled; and you ſhall have a Pouder of Martial or Chalybeated Tartar of a greeniſh Colour, and ſhining when dry, and without compare more aperitive then the purified Tartar which hath been deſcribed before: For it has in it the Vitriol of *Mars*, which the ſharpneſs of the Tartar hath drawn as the greeniſh Colour doth evidence: It is adminiſtred in the ſame Liquors, but the Doſis muſt be leſs: for the Doſis of this muſt not exceed ℈ ß to 32, in all the Diſeaſes and Obſtructions wherein we have ſaid the other was uſeful.

The Diſtillation of Tartar, and how to Extract both the Spirit and the Oyl thereof.

℞ ℔ vj of *Mercury* purified by diſſolution and filtration; put them in a Glazen well-luted Retort; then fit it in a cloſe Reverberatory, and joyn to the neck of it a large Recipient, whoſe Joynts muſt be well luted with Salted-earth, or mixt with a little of the *Caput Mortuum* of *Aqua Fortis*; let the Lute dry, and then apply a gradual fire, until you ſee white vapours begin to aſcend, and red veins to wander about the inſide of the Recipient; then encreaſe the fire, and continue even with flame of a very dry Wood, until the Recipient grows clear again of it ſelf, in the greateſt and intenſeſt action of the fire: The Furnace and Veſſels being cooled, take off gently by degrees the Lute from the Recipient, by pouring warm Water upon it; then take away the Recipient, and ſeparate the diſtilled matter, part whereof is aqueous, Mercurial, ſubtil and ſpirituous, of a ſharp, biting and penetrating taſte, which is a token of its volatile Salt, and the reſt a blackiſh and heavy Oyl of an Empyreumatical ſmell as well as the Spirit, having alſo a ſharp and biting taſte, though inflammable as other diſtilled Oyls; which ſhews alſo that this Oyl contains in it ſelf ſtore of Volatile Salt, which is not ſeparated from its Sulphur, by reaſon of the ſtrict union between them both: This ſeparation is performed in the ſame manner as we have related above. After this the Spirit muſt be rectified in aſhes, with this Note; That as Tartar is a Salt which has its original from Wine, ſo likewiſe the Spirit it yeelds is of a very reſembling nature: This is to ſay, That the Spirit of Tartar is not of the nature of acid Spirits, which yeeld their Spirit the laſt: But contrariwiſe, it has two kinds of Spirits in it ſelf, the beſt and nobleſt whereof aſcends the firſt, and this is the Volatile Spirit; the Phlegm follows after: and for the laſt follows an acid or ſtrong Spirit, which hitherto hath found no great uſe in Phyſick. The Oyl may be kept without rectifying, to uſe externally: But if in caſe you will make it more penetrative, more diſſolutive and reſolutive, you muſt alſo rectifie it upon ſome of the remaining matter after Diſtillation, and you ſhall have an Oyl capable of producing ſuch effects as we ſhall attribute to it hereafter.

In the next place, you muſt joyn again what remains from the rectification of the Oyl of Tartar, to what is left in the Retort after diſtillation, and calcine it again in open fire in an earthen Pot not glazed, until all appears white; and this diſſolve in warm Water and make a Lye therewith, running it three or four times, until the Water can attract no more of the vertue or taſte thereof: Then filtrate all your Elixivations, and evaporate gently, without any violent ebullition, until the top of the Liquor begins to contract a skin; then move the remaining matter, and have a great care to gather all what you ſee ſtick in every part of the Veſſel, and to hinder the coagulation thereof in the bottom of the Veſſel, becauſe it would prove very difficult to take it off afterwards: Continue your care and work without interruption, until all be converted into a dry and white Salt, which is the *true fixed Salt of Tartar*; to be preſerved in a very dry Bottle exactly ſtopt, with a Cork dipt in Wax, that it return not to a Liquor, which properly is called *Oleum Tartari per deliquium*, being nothing elſe but the Liquor of the Salt of Tartar diſſolved; and according to our *Great Paracelſus*, the Water or Liquor of Tartar. But when you have occaſion to uſe either this Oyl of Tartar or diſſolved Salt, you muſt let one half of it lie in an earthen or ſtone-metal Pan, this Salt being the moſt penetrative of all calcined Salts or Alkali; penetrating even through glazed earthen Veſſels; wherefore I have thought fit to give this warning,that the Artiſt may not be deceived herein. Some may perhaps wonder that we did preſcribe above, to take well purified *Mercury*, wherewith to make this Diſtillation; ſince all other Authors ſeem to be contented with Tartar as it comes from the Cask,provided it be pure and clean; whom we muſt ſatisfie, and ſhew that it is not without reaſon and very good grounds that we have ſaid it. We have ſhewed above why it was neceſſary to depurate the Tartar, by reaſon, *viz.* of its Feces, and Earth, and ſome other adventitious mixtures, which are ever found in this matter. Now all theſe impurities are capable of being calcined in the Diſtillation, and do communicate their ill taſte and ſmell to the Spirit of the Tartar, which commonly is attributed to the fire, or *Empyreuma*: A reaſon why this Spirit is very little made uſe of internally, though one of the beſt Remedies in Phyſick. Let thoſe whom this Truth will not perſwade, compare the penetrating and ſubtil taſte of the purified Spirit of Tartar, with that which is not purified, and they will know,that with very good reaſon we have been obliged to correct and redreſs this miſtake, the cauſe ſometimes of much more evil then is thought of, becauſe theſe Heterogenities have in themſelves ſome noxious quality, which not onely communicates it ſelf to the Spirit, but very intimately mixes with the Salt, and imprints and ſtamps in it an evil Idea, which cannot be corrected in the preparation of Remedies which the Artiſt is obliged to make; and conſequently may often cauſe very dangerous Accidents, which will elude the gueſs and ſuſpition of the Phyſitian.

Now let us come to *the Vertues of Spirit of Mercury*, its diſtilled and inflammable Oyl,its Salt, Oyl *per deliquium*, or with it diſſolved Salt.

This Spirit being prepared, as we have taught, and rectified in *B. M.* in a very clear Veſſel, is one of the nobleſt Remedies which Chymiſtry can yeeld; for it has the vertue and power to inciſe or cut, attenuate, reſolve whatſoever doth cauſe any obſtruction in the *Viſcera*; it is moreover capable to penetrate into the moſt remote parts of the body, by reaſon of its great ſubtility: For it expels all ſuperfluities in digeſtions, by Urine and by Sweat: Wherefore it may with very good ſucceſs be given in Dropſies, Gouts, and all Arthritical Diſeaſes, Palſie, Scorbute, Meaſels, Itch, Scabs, and Scratches, and all contraction of Limbs. The Doſis is from ℈ ß, to ℈ ij, and a whole Dram, in Broths, White-Wine, or ſome other appropriated Decoctions, according to the Diſeaſe, & the indication of the ſkilful and expert Phyſitian. We have ſaid that a Portion of the diſtilled Oyl could be kept without rectification, and that not without reaſon: For this Oyl abounds with internal Salt, which remains in the bottom whilſt the Rectification proceeds: And this Salt it is, which by its active and penetrative vertue cauſes thoſe noble effects which this Oyl doth produce in the cure of the Scurf, Tetters, and corroding and ſharp running Humors. For as we have ſaid, that the volatile Salts bear an antipathy to ſharp and corroding ones, by which both Scurf and Tetters are produced; ſo is it likewiſe the volatile Salt of the Sulphur in the Oyl which kills the acidity or ſharpneſs, dries and reſtores the Skin to its natural ſtate; and this Oyl is not uſeful onely to ſuch a purpoſe, but even works miraculouſly in reſolving *Tophus*'s and Knots about the Joynts of Gouty Perſons, and infected with a touch of the Pox, provided they have been purged before with ſome good preparation of *Mercury*, joyned to a well corrected extract of *Coloquint*. The rectified Oyl is to be outwardly uſed, but with precaution and care, by reaſon of its penetrability and great activity: But it may be mixt in ſuch Oyntments as ſhall be prepared for ordinary Scabs, Scabs called *Canine*, and all manner of Venerean Scabs internally: It is exhibited from the Wind-Cholick in white-Wine, and Spirit of Elder-berries, againſt fits, ſuffocations of the Mother. The Doſis is from ij drops to vj. The Salt of Tartar is of it ſelf a Potent Agent, and which ſhould produce unexpected effects, were it not ſo unpleaſant to take, by reaſon of its lixivial and urinous taſte: for it is the moſt ſubtil and penetrating of all the fixed Salts, both uſed as a Remedy, as alſo a very uſeful and convenient Ingredient in the ſeparation of ſeveral other excellent Medicines: They that will uſe it without Correction, may adminiſter it from gr. vj, to xxx, in Broths or Decoctions, to evacuate and expel by Stool and Urine all ſuch matter as cauſes the itching and all eruptions of the Skin, Scratches, Itches, Scurf; provided, that at the ſame time ſome Oyntment be made uſe of wherein is diſtilled Oyl of Tartar, and a little Salt of *Saturn*. But we will deliver the manner how to cleanſe it, and take away its ill taſte, rendring it Purgative, which of it ſelf will be a very good Remedy, and an Inſtrument beſides for the performance of many noble Operations in the hand of ſkilful and knowing Artiſts, who by meditation, ſtudy and labour, ſhall attain to the myſteries which it poſſeſſes. The Oyl of *Tartar per deliquium*, is of wonderful effect in the extraction of all the purging Vegetables; For when the *Menſtruums* that are imployed therein, are impregnated and acuated with a ſmall proportion of this Liquor, they penetrate into the very Center

ter of Bodies, extract their Virtues, and correct at the ſame time the noxious quality which may be in them, and that by means of the Heavenly and Magical Fire, which the Salt of Tartar has borrowed from the Light and the Air. This Oyl may likewiſe be given internally in the ſame manner, and for the ſame Diſeaſes as the Salt. The Doſis is from iv, to xx drops. It is alſo one of the principal Agents of a Chymical Laboratory to make Precipitations therewith, and to prepare the vitriolated Tartar.

To Prepare the Vitriolated Tartar, or Magiſtery thereof.

℞ ℔ j, of Oyl of ☿, *per deliquium* very clear and pure: Note, that when the Salt is very pure, and has been reſolved in a clean place, add the Liquor well filtrated, that this Oyl is of a greeniſh colour: Put it in a Cucurbit or Glaſs-body of about a cubit high, and of a narrow entrance: pour upon ſoftly and drop by drop of Oyl of Vitriol, or the Spirit thereof well rectified, until all ebullition or noiſe doth ceaſe, the weight of the Oyl or Spirit of Vitriol may be ſtinted at ℔ ß, or thereabout; but the beſt way is to proceed as we have ſaid: Then place a Still-head over the Cucurbit, and draw off all the moiſture which ſwims above the Magiſtery, until it comes to a conſiſtency of a pretty thick Pap; this done, put it in a white or bottle-metal earthen Veſſel, and dry it wholly to the vapour of a boyling Bath, agitating and ſtirring continually the ſame with a Spatula of Glaſs, not of Metal: for this Salt would extract the taſte and tincture thereof: Put this Magiſtery in a Glaſs-Viol very exactly ſtopt. It is one of the beſt Digeſtives can be given to prepare the Patients Body to Purgation; for it diſſolves all Tartarous Matters which are the cauſe of Obſtructions; Above all, it is of ſingular efficacy againſt the Splenetical and Hypocondrical Obſtructions, and of the Meſeraick Veins, againſt all Aguiſh Diſtempers, but chiefly fits of the Quartain; It provokes Menſtrual Purgations, when ſuppreſſed, and accelerates them when Retarded.

How to Prepare the Oyl of Mercury of Sennertus, *or the Purgative Salt of Tartar.*

℞ ℔ ij, of very pure and defecated Salt of *Mercury*, and put it in a Glaſs-Cucurbit: pour upon it two pints, or ℔ iv of well dephlegmated ſtilled Vinegar; ſtir up the whole together until the Salt be well diſſolved; place your Cucurbit in Aſhes, and draw the moiſture or Liquor thereof, which ſhall come off taſteleſs as Rain-Water: Then continue to d ſtil ſoftly your Salt with pints of new diſtilled Vinegar, and to draw off the Vinegar on Aſhes ſo long, until you ſhall find it to come off with the ſame ſtrength as when you did pour it on, which will happen after you have proceeded thus about twenty times: The Salt remaining after all this work is very black; but it has no more its lixivial, harſh, biting and urinous taſte; but contrariwiſe a ſavour not unpleaſant, participating of ſaltiſhneſs and acidity: The change which happens in the taſte of this Salt, proves the truth of what we have aſſerted above, that the acid Subſtances and Salts *Alkali*, convert one another in a neutral ſubſtance, which is no more either the one or the other, and yet poſſeſſes a more excellent and leſs hurtful vertue, then the bodies out of which they have been compounded, as it evidently appears in the Example of Vitriolated Tartar: for the Oyl of Vitriol is a very ſtrong Corroſive, and as an all-conſuming fire; and the Oyl of Tartar is of a ſharp, biting and urinous taſte, very unpleaſant; and nevertheleſs the reſult of both makes a very pleaſing Magiſtery by its acidity, participating no more of the quality of either of the bodies whereof it is compounded, unleſs it be its penetrating, ſubtil and diſſolving quality: This appears moreover, in that the Vinegar loſes all its acidity, and turns to inſipid Water; and this volatile acid Salt of the Vinegar, checks and turns the edge and ill taſte of the Salt of Tartar, to make it become a very good Remedy. Towards the laſt time that you draw off the Vinegar, you muſt drive this Salt with a pretty ſtrong fire, that no moiſture may remain with it: Diſſolve the ſame in Alkohol of Wine, and filtrate, to ſeparate from it the blackneſs it has contracted: Then put it in *B. M.* and draw off again the Spirit of Wine from it till it be dry; diſſolve, filtrate, and draw again until the fourth time; but the fifth time put your Veſſel in Aſhes, and cohobate again the Spirit of Wine thereon; and continue theſe cohobations, giving ſtill more and more a ſtronger fire towards the later end, until the Salt becomes white: Then put it after in a moiſt and clean place in a Glaſs-Veſſel, and it will eaſily diſſolve into a red Liquor, which is to be filtrated, and part of it kept in Liquor, and the other evaporated into Salt, which muſt be dryed and put into a narrow-neck Viol, very well ſtopt, if you will prepare it without diſſolving. We cannot chuſe but recommend this Salt in the higheſt manner to all Practitioners of Phyſick, conſidering the wonderful effects it is able to produce; for it is beyond all Remedies, to open the obſtructions of all parts of the body, and to evacuate ſoftly all matters incumbering the functions of Nature; and chiefly in all Chronical Diſeaſes and deſperate: for it purges ſoftly and without violence through all the Emunctories. The Doſis is from five Grains to twenty if it be dry; or from ten drops to thirty, if diſſolved to Liquor. It is to be adminiſtred in Chicken-Broth, or Veal boiled with Parſley and *Scorzonera* Roots, or in White-Wine wherein Damask Reaſons have been ſteep'd, with a little quantity of good Cinnamon: The Remedy muſt be taken faſting in the morning; and if neceſſity does require it, it may be reiterated about five in the afternoon.

To Prepare the Tincture of Tartar.

℞ ℔ j, of Salt of *Mercury*, very pure; and having placed it in a *German* Crucible, which beſt reſiſts the fire of a violent melting heat, put your Crucible in a Wind-Furnace upon an earthen Foot or Brick; cover it with a cover made for the purpoſe, and fill up all over the Furnace with Coals; and the fire being kindled, open the doors of the Wind-Furnace ſucceſsfully one after another, and place the Pipes or Wind-drawers above the Roof or Vault of the Furnace, that the fire may be concentrated to melt the better this Salt, which requires a more violent and ſtronger heat then Gold: And when you ſhall perceive that the Salt is fully melted, and flows as Water amidſt the flames, take away the cover, and continue the fire until it has got a blewiſh colour, and begins alſo to grow red and greeniſh; for then it is a true ſign that the internal Sulphur of this admirable Salt is opened, and as it were, drawn from its Center by the extremity of the fires action; and therefore muſt you often take a tryal with an Iron Spatula or Slice well cleanſed and dry, of the colour of the Salt; becauſe if there did remain the leaſt moiſture in it, it would cauſe the Salt to fly and break the Crucible; you muſt then be very careful to heat the ſlice before you put it in the melted Salt; Then aſſoon as the Artiſt ſhall perceive by the colour, that the Salt is ſufficiently opened, let him throw it in a brazen Morter both warm and clean; otherwiſe the extream heat of the melted Salt would crack it; and being coagulated, beat the Maſs into Pouder with a hot Peſtle; and put the Pouder alſo in a heated and dry Matraff, and pour upon it by little and little Alkohol of Wine, until it has attained to the height of four fingers above the Salt, and cover the Matraff with another ſmaller, the neck whereof may be inſerted in the biggeſt about three inches: Well lute the Joynts with a Swines Bladder dipt in White of Eggs, and place your Matraff in his Capſula upon Sand already heated, and raiſe the fire gradually until the Spirit of Wine begins to boyl; continue the fire in the ſame pitch three or four dayes, and the Spirit of Wine ſhall come forth with an Oriental Ruby-colour, and yeeld a pleaſant and fragrant ſmell, like unto that of the flowred Vine: Filtrate the Liquor, and put in other in the room, and ſo continue till the Alkohol of Wine colours no longer: put all the filtrated Tinctures into a Cucurbit, and draw off again three parts of the Menſtruum, and the remainder ſhall be a real and *true Tincture of the firſt Salt of Tartar*; the colour whereof proceeds from the internal Sulphur of the ſaid Salt, which doth communicate unto it very great and efficacious Vertues againſt ſeveral obſtinate, and as it were, deſperate Diſeaſes: For this Tincture ſtrengtheneth all the natural Faculties, and ſets them again in the juſt and true execution of their Functions, whereof the malignity and length of the Diſeaſe had made them ſwerve; for it keeps the Body ſoluble, provokes Urine and Sweat in great abundance; therefore its continued uſe doth wonderfully operate in all Melancholick Affections, Hypocondriacal and Scorbutical Diſeaſes, Dropſies, and generally all Obſtructions of the Liver, Spleen, Meſentery, Pancreas and Meſeraick Veins. Above all, it ſhews its vertue and its ſtrength upon the Bodies of thoſe whoſe Blood is infected in the Maſs with Venerean impurities: for it doth not onely ſtrengthen the vital and animal Faculties, which the venom of thoſe impurities ſeiſes upon and deſtroyes by degrees, but it hinders alſo the progreſs thereof, and rectifies the Maſs, the Maſs of Blood, and frees it from thoſe impure and noxious ſeroſities, which cauſe all ill Symptoms and Effects of this deſperate and filthy Diſeaſe; It muſt be uſed for the moſt part during the ſpace of a Philoſophical Month, which is forty dayes. The Doſis is from iv, to xx drops, in Broth, Wine, or ſome convenient Decoction appropriated to the Malady: But you muſt have a care above all things, not to mingle it with acid Liquors, becauſe they would kill the volatile part thereof, by which the beſt effects are produced.

How

How to make the true and Philoſophical Spirit of Wine Specifick againſt the Scurvy, and all kinds of Feavers and Agues.

CErtainly, thoſe that do not underſtand the actions and reactions of the fixed Alkali, of the volatile Alkali, and of the Acid, one upon the other, ſhall be ſurpriſed by the alteration of the ſmell and taſte, which are to be perceived in the progreſs of working, that muſt be performed in the diſtillation of this wonderful Spirit; but thoſe that are enlightned by the noble knowledge of Salts,and of that of Spirits,that are to be drawn from, which have obſerved as they could the ſphere of their activity, and that have been taught by their own Experience, how much the digeſtions and cohobations alter, ripen, and bring to perfection what was but almoſt begun by Nature,ſhall without Controverſie, find a great deal of ſatisfaction in the following Operation.

Take ſix ounces of Oyl of Vitriol that hath all the requiſite qualities, *viz.* The weight, the colour, and the corroding faculty; put it into a Glaſs Retort, high enough of body, pour upon a pound and an half of Spirit of Wine alkoaliſed;but make your effuſion ſlowly and by degrees, ſtirring gently the matters. Place the Retort in Aſhes, fit the Receiver to the Neck, and lute all the joynts very exactly. Firſt of all give a very gentle fire that the drops might follow one the other, reckoning three in the intermiſſion. Go on ſo, increaſing the fire by degrees, when you ſee that the drops do not follow in that manner, until you have drawn out again all the Spirit of Wine, and a portion of the Oyl of Vitriol. The Retort being cold, cohobate that which was drawn out of it with the ſame obſervations as in the firſt time, and continue the Diſtillation in the ſame manner for ſeven times, increaſing alwayes and at every time the fire towards the end of the Cohobation, that the Oyl of Vitriol might aſcend. And if it were not enough of ſeven times, you muſt continue ſo often, that you can joyn and unite the Oyl and the Spirit together, which are altered in their ſmell and taſte, ſo that they rejoyce the Artiſt; for the ſmell of it is ſo ſweet, and ſo penetrant, that it recreateth the Spirits, ſtrengthneth the Heart and the Brain, and fills up a whole Laboratory. This ſweet and wonderful Spirit doth penetrate from the very centre and bottom of the Ventricle fill the circumference of the whole body, and carrieth along with it a ſulphur and a volatile Alkali, that killeth and alters the Acid againſt Nature, proceeding commonly from the ſuperfluity of digeſtions, and which is the true occaſioned cauſe of the wearineſſes coming of themſelves, of the Dolors & Pains that are at laſt the occaſion of the Feavers, of the Scurvy, and of the other Diſeaſes that trouble ſo many Perſons. This Remedy worketh by Urines, by Sweats, and by taking away the Pains. The Doſe of it is until it communicates a ſweet taſte to the Vehicle in which you put it, as in Broth, Julep, the Dyet-Drink of ſick Perſons, or ſome other things, like, according to the indication of the Diſtemper, and the Phyſicians intention. It is alſo a Menſtruum to draw the Tincture out of the Animals, Vegetables, and Minerals, as the Artiſts ſhall be willing to make uſe of it in ſuch or ſuch Diſtempers. And I am certain, that if you uſe it with Rule, you ſhall never have occaſion to repent to have employed your Money and your Pains, to make that Philoſophical Spirit.

The way how to make a Vitriolick Spirit of Tartar, diſopilative and Diuretick; as alſo a good Tartarum Vitriolatum.

THe two Remedies which we add here, are of ſo great vertue, and produce ſo fine and ſo good effects in the Cronical Diſtempers, that we had thought to wrong the Publick if we ſhould not acquaint him with the true Method to prepare them well; and eſpecially becauſe thoſe Medicaments are ſweeter, and more convenient than many others that are made uſe of againſt the obſtructions of the Belly and it's parts. You muſt make them thus:

Take three pounds of that Vitriol that cometh from *Liege*, which hath been dryed to a whiteneſs in a Stove, or in any other hot place, provided it be not in the Sun; and three pounds of good Tartar of *Montpellier* that is purified; Pouder each of them by it ſelf, then mix them exactly, and pour them in a great Glaſs Retort that you muſt place in the cloſe Reverberatory; fit to it a very big Receiver, the joynts of which you are to lute very exactly: begin the fire by degrees, until the vapours and the clouds appear; then feed it in that degree with care and circumſpection: but as ſoon as the vapours ſhall decreaſe, increaſe the fire, and begin to make a fire of flame to continue them, and to draw out of the matter all that which it is able to give, by the activity of the heat, & of the Calcination; for you muſt not leave nor ceaſe the Operation without having kept the Retort in a perpetual redneſs during the ſpace of twelve hours; then ſuffer the Veſſels and the Fornace to be cold, put the liquor of the Receiver in a new Retort, and put it in Aſhes, joyning to the Neck of it a leſſer Receiver that you muſt lute with wetted Bladder; give a moderate fire at firſt to draw out the Phlegm which ſhall be endowed with a volatile Spirit: But obſerve that you muſt taſte now and then the ſtilling drops, to the end that you may change the Receiver when you ſhall perceive them to be ſharp and penetrant; keep that ſpiritous Water in a Glaſs well ſtopped, and go on in the Rectification of the Spirit till the matter be dry; and if there be any portion of Oyl that ſwims over, ſeparate it by the Funnel, and keep it by it ſelf, as alſo the Spirit. The ſpirituous Water is good for Children that are troubled with Convulſion Fits, with a little White Wine, or Water of Flowers of Lime-tree. The Doſe of it is from half a Scruple to the quantity of two Drams. You may alſo make uſe of it in the beginning of the Falling-ſickneſs in Children, and in Perſons of a greater Age. The Spirit may be alſo given from five drops to fifteen, and twenty in Broths, in Juleps, and convenient Waters, againſt the Dropſie in its beginning, againſt the Obſtructions, the Scurvy and running Pains cauſed by Rhumatiſms.

The Vitriolick Tartar.

As ſoon as the Retort is almoſt cold, you muſt take it out of the Fornace, break it, and put the matter contained in it in diſtilled Rain-Water a little more than lukewarm in a great Earthen Veſſel, and leave it to diſſolve; then you muſt ſtir it with a wooden Peſtel, that the matter might penetrate the leaſt parts, to draw out of two of them, the firſt Salt: filtrate that firſt Liquor, and pour again new Water upon until it be taſteleſs. Put all your filtrated Liquors in a Glaſs Body in the Sand, cover it with its head; and by the Diſtillation draw out the Water till you perceive that upon the ſurface of the Liquor there be a little skin: Take out the Body and ſet it in a cold place, ſome while after you have ceaſed the fire: Separate the next day after, the Salt from the Liquor that you muſt dry in a Porrenger on the moderate heat of Aſhes, having covered your Veſſel with a Paper pierced with many holes. Continue the diſtillation of the Liquor remaining, and make an end to draw and dry all the Salt, that you may keep in a Viol well ſtopped with a Cork dipped in melted wax: The Doſe of it is from ſix grains to one; half a dram in Broths, in Apozemes, or in any Electuary digeſtive or purgative; for it cleanſeth, cuts, attenuateth, and evacuates ſlowly and gently the ſlimes and viſcuous matters, and other ſuperfluities of the digeſtion; It dulls and modifieth the Acid ferment againſt Nature and too much exalted, which hath its ſeat in the Ventricle, and that is the origine of many Diſeaſes.

How to make the Diſſoluble and Purging Tartar.

THoſe that have made uſe of the Cremor of Tartar, and of it Cryſtal, know what difficulty there is, if not impoſſibility, to diſſolve any one of them in any cold Liquor good to drink, although they be reduced to a very ſmall Pouder. Likewiſe they know, That the Broth or Water in which they give it, muſt needs be boyling to diſſolve them; and that as ſoon as that degree of Heat is paſt, the Tartar precipitates it ſelf in the bottom of the Veſſel, ſo that there remaineth in the Liquor but a weak ſowerneſs of the Remedy; and being ſo that it is uſeful and neceſſary for entertaining as well as procuring Health: I have ſought the way to make it diſſoluble in any cold Liquor by its proper Salt, as alſo to make it of a ſweet taſte, ſince the acid of Tartar alters and corrects the urinous, lixivious, and ill taſte of it's Alkali. You ſhall make it thus.

Take two pounds of Tartar of *Montpellier*, well purified; pouder it very ſmall: take alſo two pounds of Salt of Tartar reſolved in the Air, which they call unproperly *Oleum Tartari per Deliquium*; put it in the Sand in an Earthen Veſſel, and heat it till you can no more endure your finger in it, then put your poudered Tartar in a ſmall Sive, and paſs it through, ſo that an ounce may fall into the Liquor at a time, which will cauſe a Fermentation by the action of the acid upon the Alkali; ſtir it gently with a wooden Spatula, and when the noiſe is paſt, and the diſſolution done, go on in the ſame manner till you have ſpent all the pouder of Tartar, then make a gentle fire, till the ſuperfluous humidity be evaporated to a dry ſubſtance.

Take the quarter of that which remaineth, and diſſolve in twelve times ſo much of ſtilled Rain-water; put that diſſolution to digeſt in the *Balneum* during the ſpace of two natural dayes, then filtrate it by the Paper or the Felt. Evaporate that Liquor to a dry ſubſtance in Aſhes in a moderate heat, and you ſhall have a diſſoluble and purging Tartar that is good in the Cachexies, and ſpecially when you make uſe of Steel; for this Salt cleanſeth, emptieth, and carrieth along with it ſelf out of the Stomach and Bowels what the acid againſt Nature had diſſolved of the ſubſtance of Steel, which giveth that black Tincture to the Excrements, that the moſt part of thoſe that are ignorant in Chymiſtry, and in its Myſteries, impute to the Evacuation of the Melancholick Humor, that they imagine to be of that colour. The Doſe of that Tartar, is from one half Scruple to a Dragm. You muſt ſtill the three quarters remaining of that Salt in the ſame manner above ſaid, when we have given the Method to ſtill the Spirit of Tartar Vitriolick. There is only that difference in the rectification, that you muſt ſeparate the Oyl, and diſſolve it with ſome Alkohol of Wine, or the pureſt Spirit of Wine, till they be very well united; then rectifie the Spirit by it ſelf, and draw it till you find it to be no more of a penetrant and ſharp taſte, which poſſeſſeth that that you muſt joyn to the diſſolution of the Oyl, which you ſhall rectifie together and cohobate as often, that the Oyl and the Spirit make but one ſole Body.

Take that Spirit endowed with an Aromatick and very penetrant taſte, to ſerve in the room of the volatile Spirit of Salt of Tartar, and make uſe of it boldly in all the Diſeaſes to which we have ſaid before, that the Spirit and the Tincture of Tartar was good for; but be ſure that it is an admirable Remedy againſt Agues, whatſoever they be.

The Doſe is from five to twenty or thirty drops.

An other Sublimation of Gold, by the Fulmination.

VVEE have not found hitherto a better way to open the Gold, to draw out the Tincture, than that which followeth:

Take half an ounce of Gold, purified by the Antimony; let it be beaten into thin plates, cut it in very ſmall pieces, that you muſt make red hot in a Crucible; then put them in a Matraſs, and pour upon them three ounces and an half of *Aqua Regalis* prepared with *Aqua Fortis*, made with two parts of Vitriol and one part of Nitre: you muſt put into a pound of that *Aqua Fortis* ſix ounces of Salt Armoniack that is clean, and reduced to pouder. You muſt ſtir all ſeveral times, to the end that the *Aqua Fortis* might ſufficiently draw to it ſelf the Armoniack Salt; put the Glaſs in the Aſhes to a ſlow heat until all the Gold be diſſolved; that done, add to your Diſſolution half an ounce of ſtill'd Rain-water, that the diſſolvant might be made weak, and the precipitation might be done better.

Put your Solar Diſſolution in a great Earthen Porrenger, pour upon little by little ſome Oyl of Tartar, *per Deliquium*, till the Gold falls down in a yellow Clay, and that the Water becomes clear; ſeparate it gently by Inclination, and pour upon it drop by drop, ſome Spirit volatile of Urine, to make an end to precipitate that little of Gold that might have remained from the firſt action with the Liquor of Salt of Tartar. Joyn what hath been differently Precipitated, & waſh it, until the Water ſwimming over be taſteleſs: Then take away the Water, and dry very ſlowly that which is commonly called Fulminant Gold. Moreover, place in a little Furnace a ſilver Body of a foot high, containing twelve inches, to the half; put round about it ſome Lute to with-hold the fire: the Body muſt have a round Pipe too, and that be alſo of ſilver, of two inches and a half in length, and of an inch in diameter, that be joyned in its body to the height of nine inches: The Pipe muſt be of an inch and an half within-ſide, and an inch without. You muſt yet have two ſmall ſilver Lanthorns, proportionated to the inward Diameter of the Pipe, they muſt fit in, juſt in the length of two inches unto the handle, which muſt be garniſh'd with ſilver, and ſhut exactly that up of the Pipe that is without: We have given the Name of Lanthorn to that Inſtrument, becauſe it muſt be made as the Lanthorns with which they charge the Guns, the length that they muſt enter into the body. That being ſo, you muſt make a fire in the Furnace, and heat the Body, that you muſt cover with a fine Glaſs-head, and when you cannot endure the heat of the Body, touching it with the hand; you muſt put in one of the Lanthorns about half a dragm of the Fulminant Gold that is very dry: You muſt put it into the Pipe until all joyneth very juſt to ſhut it well; then beat gently upon the back of the Lanthorn with ſomething hard, and make fall down only at a time a grain, two, or three, of the Fulminant Pouder that will fulminate preſently, if the bottom of the Body be warm enough; if it doth not crack, you muſt increaſe the fire a little, and make the tryal till you hear the noiſe of the Philoſophical ſhooting: By all means take heed not to make fall down too much pouder at a time, otherwiſe the violence of the noiſe ſhould blow up the Head and break it, and would alſo break the bottom of the Body.

I muſt confeſs, That this Operation is very pleaſant, provided it be well governed; for in the time that the noiſe of the Fulmination is a-doing; ſome briniſh vapours, and purpureous, riſe up to the Head that make it very dark, and at laſt ſtick to it in an impalpable Pouder; and in the in-ſides of the Body, you ſhall even perceive a Liquor, but in a ſmall quantity, that doth condenſe, and floweth by the Neck of the Head in a Receiver; which is nothing elſe but the pureſt and more fixed of Salt of Tartar, that the Gold had kept to it ſelf, notwithſtanding all the precedent Lotions; and it is that properly which cauſeth the Fulmination.

The drops that fall are as blue as Azure, becauſe they have drawn the Tincture out of the Silver being in Vapours. You muſt put another Lantern with new Gold, as ſoon as the other is empty; and entertain the fire in the ſame degree, until you have ſublimed and fulminated all your Gold. And when the Veſſels are cold, you muſt take out the Flowers, or the Solar Pouder, with a feather, as much as you can out of the Body, and out of the Head; and if there remaineth ſome that ſticks, you muſt waſh it with clean Water, then filtrate the Water, and the Pouder will remain in the Paper; that you muſt dry gently, and joyn it with the other. It is a Gold very open, out of which you may draw the Tincture with ſeveral volatile Menſtruums, of which we have made mention in ſeveral places of this Book.

There is ſome that give of that Gold, from two grains to ten, in any Conſerve, or any Cordial Confections in the Malignant Diſeaſes, and Preſcribe ſome Sudorifick Waters to drink upon it, they maintain that it provoketh Sweat with ſucceſs. As for me, I had rather to make uſe of the Tincture, becauſe it is more Efficacious, and Sympathiſeth more with our Nature.

How

How to Prepare the Diſſoluble Glaſs of Tartar, and to Extract the Tincture thereof.

WE have ſhewed, in the foregoing Operation, the manner of Extracting the Central Sulphur of the Sal ☿, to whom we have aſſigned many noble Qualities: But we think it alſo neceſſary to evince, that Salts Alkali are not only the Diſſolvents of Sulphurs, but alſo their Extractors. To illuſtrate this Aſſertion by a demonſtrative Example: We will take the Calcination, Vitrification and Extraction of Peble Stones, by the help of Tartar and Alkohol of Wine. And we muſt let the Reader know, what kind of Stones are to be choſen, which may yeeld the ſolar embryonated Sulphur contained in them; and when the Salt draws to its ſelf, to impart afterwards to the Spirit of Wine, which is no ſmall myſtery in Chymiſtry. To bring then this Operation to paſs, take Pebles out of Brooks, or Rivulets falling from Mountains, that are rocky and full of Woods, and if it be poſſible, where ſome adjacent Ground may contain metallick Veins, and where the Waters and ſmall Rivers may abound moſt with Trouts, well ſpotted with red Purple ſpots, high in colour; for this will be an infallible ſign, that the Peble Stones contained in thoſe Brooks or neighbouring grounds, contain in themſelves embrionated Metals, which before and after Calcination begin to appear: before by external marks and ſtreeks, which are red, green, blew, purple Veins, and mixt with ſome other colours arguing their metallick Tincture: And beſides, becauſe that even inwardly are not only found ſuperficial ſpots and colours, but in ſome alſo are found ſmall ſcales and grains of perfect and true Metal, holding proof as Gold and Silver upon the Touch-ſtone, as I have oftentimes made the tryal my ſelf upon ſtones which were brought from about *Cledon*.

To begin then this Operation; Fill a great Crucible with ſuch ſtones, and in a Wind-Furnace bring them to a full redneſs; and being thus fired, throw them in a Baſon half full of freſh Water, by which means they become brickle and eaſie to be reduced to Pouder in a Morter; after which you muſt grind them on a Porphurie Morter or Sea-ſcale — until it be reduced to Alkohol, or impalpable Pouder; which having well dryed, mix it in a hot Morter with five times as much of Salt of Tartar, very pure and very dry; you muſt have at leaſt ℔ j of this mixture in a great *German* Crucible, ſo capacious, as that the half or two of it may remain empty, to give way to the raiſing and boyling up of the matter; whilſt it is melting in the extream heat of the Wind-Oven, your care alſo muſt be, whilſt it runs in the Crucible, to draw off with the point of ſome Iron Inſtrument ſome of the melted Matter, to try if it be reduced into the ſubſtance or form of a green, yellowiſh-Glaſs, clear and tranſparent; but you muſt ſound the Crucible to the very bottom, to try alſo whether all the Pouder or Duſt of the Stones be melted, and united with the Salt; which if you find to be ſo, take off immediately the Crucible from the fire, and throw the vitrified Matter or Glaſs in a very hot Morter, and with a hot Peſtle alſo ſtirring it well, to reduce it to Pouder; for if you did give it the leaſt leaſure to cool, it would immediately be reſolved into a viſcous or clammy Liquor, which ſhould ſhut up the Sulphur, and hinder that the Alkohol of Wine might not have its operation upon it; Heat the Matraſs before you put in the duſt of this Roſoluble Glaſs, and pour thereon by degrees of very ſubtil Spirit of Wine, until it be moiſtned and penetrated on all ſides; then pour of the ſame Spirit three or four fingers high above the matter: Put the Veſſel in Sand already warm, and apply a competent fire to it to bring the Spirit to a ſimpering: The Veſſels muſt be covered and ſtopt with the ſame precautions as in the foregoing Tincture. The Extraction being made, and the Alkohol of Wine loaden with a fine red colour, draw it back and filtrate, then pour on new, and ſo continue to digeſt, extract, and filtrate until the Spirit takes no more colour. All theſe Tinctures joyn together, and draw back the Spirit in *B. M.* with a ſlow heat, until you ſee a very red Tincture, of a very good ſmell, and a fiery, penetrating and piercing taſte; then ceaſe the fire and draw the Tincture, which you are to put in a Viol of a very narrow neck, ſtopt, if poſſible, with a glazen ſtopple exactly fitted, or with Cork ſteept in melted Wax, and a double wet Bladder over. This noble and excellent Tincture, preſerves its colour and vertue, much longer then that which is extracted from meer Salt of reverberated Tartar, becauſe the Salt hath drawn from the Pebles their Metallick Sulphur, which is of a ſolar nature: Now the Salt cannot retain this Sulphur when it is put to digeſt with pure Spirit of Wine, becauſe the Sulphur immediatly is communicated to the Spirit of Wine, which is an æthereal and volatile Sulphur, which by the mutual analogy and ſympathy they have together, extracts and draws it from the Center of the leaſt part of the Salt. This Tincture hath a more diffuſe and general vertue then the foregoing: Therefore it may be exhibited not onely in all Diſeaſes, for which we have mentioned the other to be fit and uſeful, but it may moreover be adminiſtred in all intermittent Feavers, and chiefly in the Quartane; as alſo in all Chronical Diſeaſes, which for the moſt part propagate themſelves, by reaſon of the depravation of the internal Faculties, which this Remedy repairs inſenſibly, as by a Miracle. Above all, It is to be uſed in obſtructions of the Kidneys and Bladder, whether proceeding from viſcoſity of clammy humors, or Sand; or whether alſo the Diſeaſe be occaſioned by the imitation of the *Archeus* of thoſe parts, which is immediately allayed by the eradication of the vertue of that ſolar Sulphur ſhining in this Tincture. We ſhould never make an end, ſhould we relate here of all what both antient and modern Authors have operated upon Tartar, or what our own experience hath drawn from it. It ſuffices that we have ſufficiently enlightned the Artiſt, to guide himſelf both in the Theorical and Practical part of the preparation of this noble and miraculous Salt; which conceals and contracts in it ſelf the greateſt part of the Myſteries both of Art and Nature, unto which the Artiſt will never fail to attain, if he learneth to chuſe well his Wine, Vinegar and Tartar, and applyes himſelf with induſtry to the work and ſtudy of it; which two things are the main props of all Chymical Curioſity.

Of Opium, which is the condenſed Juyce of Poppy.

OPIUM is one of the chief ſtumbling ſtones of thoſe which are Sectators of the pure Galenical Phyſick, and have ever avoided to ſet their foot in the Sanctuary of Chymiſtry: Which Averſion can only proceed of their want of knowledge in natural things, and a true experience of their Vertues: For *ut ignoti nulla cupido, ita nec cura*; and as nothing elſe but Nature it ſelf, and natural Philoſophy, which is Chymiſtry, can have perſwaded by diligent ſearch and labour; and reiterated Experiments, that Opium is not to be feared nor rejected from amongſt Remedies, whether it be raw and crude, as it is brought to us from the Eaſt, or prepared according to the Rules and Preſcriptions of Chymiſtry: So is it not to be wondred at, if they that call themſelves *Chriſtians*, and yet have never been ſearchers of Nature, do every day deſpiſe what they never knew, but by the Teaching and Reaſoning of ſome Profeſſor who has only read that Opium was unfit to be uſed, and that it was condemned by *Pliny* and *Galen*; which is too ſufficient an Authority (in their Judgments) to be condemned by ſuch as openly profeſs and make it a ſcruple of Conſcience, not to follow blindly their Maſters; and ſwear, as they ſay, *In Verba Magiſtri.* But that which is yet much more to be wondred at, is, That they will by a Soveraign and Magiſterial Authority, eſtabliſh in their Hearers a Belief and Aſſent of their Doctrine, without being obliged to prove it by effects and real demonſtration; and the worſt of all yet is, that they will treat injuriouſly ſuch as are not willing to condeſcend to their Opinion: Though theſe laſt, either Antient or Modern Writers, are grounded upon the Baſis of true and ſolid Reaſon, whoſe right Foundation is Experience. For it is not enough for a Chymical Philoſopher to ſay, That Opium may be prepared and corrected in ſuch a manner, as it may inoffenſively be inwardly taken; ſince this were no better then tacitely to confeſs, that it is naught and dangerous of its own nature: But a true Naturaliſt muſt ſearch the reaſon of things in their very ſpring; to examine if that which produces the controverted quality, is of it ſelf good or bad. Now all thoſe that are verſt in the Hiſtory of Plants, know that the Poppy, from which Opium is taken, is a Plant which in all times has had its uſe and credit in Phyſick; As likewiſe the Opium, as without controverſie it is proved by the Syrups which are compounded therewith, by the Seed put in emulſions, and by the Opium it ſelf, which without any due preparation, is uſed in the compoſition of Electuaries in all Diſpenſatories, and whence they have the name of *Opiates:* Whence it is plain, that the Poppy hath at all times been allowed amongſt the beſt Practitioners, in the number of Remedies. Which thing to examine a little more ſtrictly, I ſhall entreat all impartial and unprejudicated Judges to conſider, that the Syrup of White Poppy, that of the red-flower Poppy, and all the kinds of *Diacodium,* are nothing elſe but Extracts, or Juyces of Poppy mixt with Sugar to reduce them into Syrups, which are every day made uſe of in all kind of Diſeaſes, whereto they are proper, with very good ſucceſs: And whoſoever will make a judicious and unprejudicated reflection upon Opium, which is the *Maſlack* of the *Turks,* or the *Meconium* of Latins, ſhall find that whatſoever efficacy and vertue is in theſe two condenſed Juyces, comes but from the ſame Spring from which both the Syrups and *Diacodium* did originally derive theirs. For whether it be that the Water draws the vertue of the heads of Poppy, which contain its imperfect Seed; and that this vertue be alſo concentrated in the Syrup: It is likewiſe the ſame vertue which is extracted from theſe heads of Poppy by their bare inciſion, which occaſion thoſe drops that by little and little are condenſed, and yeeld that thick and condenſated Juyce which is the true *Opium or Maſlack of the Turks.* Or whether alſo this expreſſion draws the vertue of the Juyce of Leaves, or tender heads of

Poppy, which make the *Meconium or groſſer Opium*; We muſt acknowledge, that either the Poppy and its Preparations are to be baniſht from the uſe of Phyſick; or if the Decoctions, Syrups, and *Diacodium* continue to be in uſe; then the Opium or even the *Meconium* cannot be rejected, ſince they proceed from the ſame Plant: and that theſe Juyces thickned and condenſated, have nothing elſe in themſelves, but contractedly what the foreſaid Remedies contain and afford in a larger bulk and proportion of matter. But if any body would object, that the Decoction and Sugar only, take what is good in the Poppy, and that the hurtful part remains behind, we muſt have recourſe to the Anatomy of the Plant to anſwer this Objection, and ſay, That this Plant is compounded of groſs and ſubtil parts: That the Groſs are the Herb and Juyce which eaſily is drawn from it and in good quantity; that in this Juyce are inviſibly contained the ſubtil parts, which are an external and material Sulphur, unſeparably mixt with another internal Sulphur, and with volatile, mercurial and ſulphureout Salt, which are folded in, and ſhut up in the groſs and tenacious Maſs of the ſubſtance which conſtitutes the Opium, and hath much of groſs Salt, and terreſtrious or earthly parts in it ſelf, but chiefly *Meconium*. Now as Poppy is not yet ripe nor well digeſted, when employed to make Syrups, Opium and *Meconium*, ſo as the Sulphur cannot yet ſufficiently be concentrated in the Seed, to hinder the predominancy of the Salt, which is ſo mixt with it as to be yet embryonated, and ſo diſſolved and united to the Water which is added in the compoſition of the Decoction, or the Water of its own Juyce: An evident proof, that the ſame virtue which is diffuſed in the Decoction, whereof Syrups are made, and all the kinds of *Diacodium*, is more contracted and united in the Juyce, which naturally comes forth out of the heads of Poppy, whereof the Opium is made by Inciſions, or extracted by Expreſſion, as the *Meconium* is. All this we have ſaid above, tends onely to ſhew that it is a wrong and injury done to the Art, to uſe with Authority and great commendations thoſe common Remedies which by courſe and rude preparations are taken from the Poppy, and for the moſt part diſtaſte the Patient by their quantity and unpleaſantneſs; and to forbid obſtinately thoſe which are invented by Chymical Phyſitians, who have moreover ſeparated the purity from its impurity, and ſo judiciouſly with ſo much Art, have redreſſed and corrected all the defects which might be attributed to Opium; and that beſides, they preſcribe it in a very little Doſis and ſmall proportion; they have ſo much altered the caſe and odour thereof, that thoſe which, without being acquainted with it, take upon themſelves to traduce and cry it down, would be much put to it to know it, if laid before them without being told, or put in ſome ſuſpition or gueſs thereof by having ſome ſmall light from Chymiſtry, which might beſt of all teach them. But to add yet more weight to what we have ſaid, let us joyn Experience to Ratiocination: for that true Touch-ſtone will teach us, that whole Nations uſe every day *Opium* or *Maſlak*, very pure and unmixt without interruption, for the richer ſort; and *Meconium* for the meaner ſort of people, and that without any previous preparation, and in a very exceſſive Doſis, ſince they take it from ℈ ß at leaſt, to ʒ j, wholly, without receiving thereby any hurt or prejudice, have only a kind of giddineſs in the Head as if they were drunk; which hath made the proverbial Reproach, *You have taken Opium:* As if we ſhould ſay amongſt us, *You are Drunk*. To confirm this Aſſertion, we have all the moſt Authentick Records, and famous Relations of thoſe that have travelled in the *Indies* and the *Levant*, chiefly amongſt the *Mahumetans*; who all believe that Opium doth raiſe their Spirits, makes them more couragious & bold, and cauſes them to undervalue dangers and perils. The *Indians* take it to hinder ſadneſs, and prevent melancholly from ſeizing upon them; as alſo to be more enabled to ſatisfie longer the luſt and luxurious inclination of the *Indian* Women. It is true that the ſame Authors do tell us, That if thoſe that are not accuſtomed to it, would at firſt undertake to uſe as much at once, as thoſe that by cuſtom have made it familiar to their nature, they may fall in very dangerous and ſad accidents, and run even hazard of their lives: But that ought not to bring a prejudice and aſperſion upon Opium to reject it abſolutely, ſince the hurtful quality with which it is upbraided, proceeds onely from the exceſs made by them that take it without having been acquainted with it before, & habituated their Bodies to it by little and little; juſt as if Wine ſhould therefore be diſ-eſteemed, becauſe ſome body may be diſordered by it, either by an over-proportion of what he takes, or becauſe he is altogether unacquainted with it. Do we not ſee that Tobacco either taken in ſmoak, chawed, or in ſneezing-pouder, cauſes very ill and ſurprizing Symptoms in all thoſe which are not accuſtomed unto it, bringing a ſudden giddineſs upon them, vomiting, cold ſweats, even as if they were at deaths-door; and yet neverthleſs when they have made it habitual, ſome are ſo wedded to the uſe of it, that they can by no means be taken from it, or deprived of that comfort. Therefore we muſt never raſhly give our Judgment of the ill effects which are produced by the exceſſive uſe of any thing, otherwiſe we muſt condemn the beſt things that are ſought for and appointed for the preſervation of our life; witneſs this Axiom in Phyſick, which ſaith, that *Omnis repletio mala, panis autem peſſima.* And thus much had we to ſay concerning Opium, and thoſe which daily make uſe thereof with very good ſucceſs in their practice, to maſter Diſeaſes, and correct their moſt dangerous and troubleſome Accidents. We will only add to this, before we come to the practical part, a word very conſiderable; and it is this, That I believe to have found the reaſon why Opium doth not make ſo great an impreſſion upon the Eaſtern people, according to my Judgment as upon *Europeans*: Becauſe theſe drink Wine or ſome other fermented Liquor for the moſt part, ſuch as are Cider, Beer, *&c.* and the others drink none but commonly Water. Now the fermented Liquors do exalt the Narcotick and Soporifick Sulphur of the Opium, and by the ſubtility of their Spirits convey it into the very Veins and Arteries, where it makes, or is capable to make (I ſay Opium) many dangerous Impreſſions, being taken in too great a Doſis, or not prepared with all the exactneſs acquired. I conclude then, this Theorical Diſcourſe of Opium, by the proteſtation I make, to have expoſed none but of the beſt and moſt exact preparation, according to the preſcription of the moſt learned and famous Practitioners of our Age, and that in greater quantity then any Apothecary of *France* ſince thirty years has done, without ever ſeeing any ill accident to happen contrariwiſe; I have ſeen ſo many, ſo admirable, and ſo laudible effects, that I will be ready all my life-time to acknowledge in thankfulneſs, and to praiſe thoſe to whom I am obliged for the knowledge of this Heavenly Remedy: The preparation whereof follows, according as Study, Labour and Experience hath taught it me.

The common Preparation of Opium.

I Do not queſtion, but ſome carping Critick will ſay, that I have omitted in the foregoing Diſcourſe, the Diſpute of Controverſie ordinarily rais'd in the Schools, between thoſe that maintain Opium to be cold, becauſe it was the Opinion of Antient Phyſicians, and others, who affirm it to be hot: Becauſe their ſenſe, and the experience of its effects, ſeem to force us to entertain this his opinion, and to aſſent unto Truth. We would have handled Queſtion *pro* and *con*, had it not been that we profeſs Chymical Philoſophy, whoſe preſcription it is; we ſhould attend the things, and not the words, and not judge of the truth thereof by the ſeveral imaginary degrees of their qualities; but rather dive into the knowledge of the internal eſſence of Mixts by their Anatomy, which gives a true light, and diſcovers unto us what Principle it is which predominates in natural bodies, that from thence we may fetch the true Indication of their peculiar proprieties, & the uſes whereunto they ought to be applyed.

To perform this creditably, we muſt begin in the choice of Opium or *Meconium*; for it were pitty the Artiſt ſhould ill beſtow his time and his materials: Therefore, he muſt have the capacity to judge betwixt good and bad ones, and the ability to diſcern between the Sophiſticated, Adulterated, and that which is legitimate and ſkilfully prepared; *Nam bonum à malo, falſum à vero diſcernere periti eſt Artificis.* But as the true and right *Maſlak* of the *Turks* can but difficultly and rarely be met with; whoſe qualities are a very ſtrong and unpleaſant ſmell, of a yellow colour, inclining ſomewhat to the redneſs of Lyons hair, very bitter, biting and fiery in the Palate, and upon the Tongue, ſo that it ſeems to ſet it on a flame, being compacted and well united in a heap, as a ſmall Cake conſiſting of many ſmall Grains of ſeveral colours, becauſe in gathering the drops flowing from the Inciſion made in the Poppy-heads, there will ever ſome corn of the Seed be mixed with the flowing Liquor: It is neceſſary we ſhould give ſome notes of Direction to chuſe the beſt and pureſt of that which is called *Meconium*, drawn by Expreſſion from the Juyce of Poppy-heads bruiſed, or by the mixture of the Juyce of the Leaves: It were to be wiſht, that thoſe from whom we have it, would be contented with this coarſe preparation without ſuper-adding other Juyces to encreaſe the Maſs: For the Cakes of Opium which are brought from *Natolia*, are ordinarily of the weight of ℥ iiij, or ℔ ß at the moſt, whereas thoſe that come from *Alexandria*, *Egypt*, *Venice* and *Marſilia*, are for the moſt part of a pound weight, whereby it is eaſie to diſcover that thoſe who drive a trade of it, do encreaſe the weight thereof at leaſt of one half part.

The Sophiſtication of it is performed three ſeveral wayes: The firſt is, with Juyce of Glaucium or Apple of Love; but this Cheat is eaſily diſcovered with diſſolving it in a little Water, which immediately turns yellow as if Saffron had been in it. The ſecond is done with Juyce of Endive and Wild-Lettice, but this alſo is known, in that when you cut the Cakes of Opium or *Meconium*, the inſide is ruffer and leſs ſmooth, and has a more mixt odour, obſcurer and more difficult to be diſcerned. The third and laſt way of diſguiſe is done with Gum, which alſo is very eaſie to be diſcovered, for the Cake is more brickle and more ſhining; and moreover, this is the worſt ſort of all, having much leſs ſtrength and vertue. By which it may be evident, that the true notes of *Opium* can be no other then thoſe we have already aſſigned, except that the *Meconium* which is the moſt common ſort amongſt us, is more compact and united, more black and ſtrong in ſmell; but it is not ſo bitter, ſharp and biting in the mouth, by reaſon of the other parts of the Poppy mixt with it, which are not yet exalted, nor their volatile Salt concocted, as is the Juyce proceeding from the head alone, either by Inciſions or Expreſſions. The Artiſt then having choſen his Opium ſuch as he ought to have, muſt cut it in very ſlender ſlices, which he ſhall ſprinkle in an Iron Pan with good Roſe-Vinegar, until the Opium be reduced to Pap with the Vinegar, by agitating and ſtirring of it with an Iron Slice; then put the Pan on a very ſmall fire, and ſo by degrees dry the Opium without encreaſing the fire to prevent burning, until it be wholly dry and be crumbled from its lump, and reduced to a pouder, and making no more ſmoaks. This pure and ſingular Operation produces two conſiderable effects: The firſt, That by its ſlow and moderate Exhalation, and the continual Agitation of its external Sulphur, it drives away the impure and undigeſted Opium, by which all thoſe diſorders which commonly happen and are feared, be produced. The ſecond is, That it corrects and fires in a manner the volatile Salt of the ſame by the acid Spirit of the Vinegar: and that moreover, it changes alſo the bitterneſs and the ill taſte thereof. The Chymical Apothecary ſhall keep this Opium thus corrected in his Shop, to uſe in the compoſition of all ſuch ordinary Remedies when that Ingredient is required; as alſo to make therewith the moſt exact and Philoſophical Preparations, according to the Preſcription which we will give hereunder.

To make the Extract of plain Opium.

PUT in a Matraſs ℥ iiij. of prepared Opium, prepared after the way above related, in very ſmall pouder, pouring upon good diſtilled Vinegar the height of four fingers: ſtir very well the ſame, and then put your Matraſs, to digeſt in ſand or aſhes to extract the Tincture of Opium, which will ſeparate from its groſs and earthly parts, wherein the greateſt part of its impure and inquinated Sulphur lies lurking; when the diſtilled Vinegar ſhall be well impregnated with the colour of the Opium, draw it off by Inclination, and with a care of not troubling the grounds; then pour again new Vinegar, ſtir and extract, and ſo proceed until the

Spirit of Vinegar comes off no more coloured then when poured on: filtrate theſe Tinctures, and lay aſide that which ſhall remain in the Bag, and dry it, to uſe the ſame as we ſhall immediately direct. Evaporate ſoftly in ſand all the Tinctures to a conſiſtence of Honey boyled into a thick Syrup, which you ſhall keep; then take the remainder of your Extraction of the Opium made with diſtilled Vinegar; which having dryed, put in a Matraſs, and pour upon rarified Spirit of Wine acuated with ℥ j. of the Salt of the Tartar of *Sennertus*, to every ℥ iiij. of Spirit, that this Menſtruum thus animated, may extract the remaining internal Sulphur of the Opium, which the Spirit of Vinegar could not do, and may at the ſame time alſo digeſt its unripeneſs: continue theſe Extractions in *B. M.* until the Spirit take no more of the colour; filtrate the Tinctures, and draw off again the Spirit of Wine in the ſame Balneo (which will ſerve anew for like operations) to a conſiſtency of decocted Honey; then joyn the two Extracts together, and go on in evaporating till they attain to the true conſiſtency of a ſolid Extract, which may be framed ino Pills, ſo ſhall you have a Body of extract of Opium, depurated and corrected, which will ſerve to make all the other compounded extracts of Opium, which by excellency are called *Laudanum*; as if one ſhould ſay, a Remedy which cannot be exalted or praiſed enough, and exceeds even all kind of praiſe, as the rare and admirable effects which it daily produces in the hands of the moſt skilful and excellent Practitioners do ſufficiently witneſs every day. This general Extract of Opium may already in a manner be called *Laudanum*, ſince it is the ground and foundation of all others, and that without any either danger or ſcruple it may be uſed in many Occurrences, chiefly when the Chymical Apothecary ſhall be yet unprovided of the other kinds of *Laudanum*, which are more exalted, and admit of ſome other Ingredients in their compoſition appropriated to the diſeaſe in hand, or intended for help or eaſe of ſome particular part of the body.

Before we attribute any vertue to this plain *Laudanum* or Extract of Opium, we are obliged to prove that it is not capable of any of thoſe ill effects, which the moſt circumſpect and leſs venturous are afraid will happen from the uſe of Opium: Which ill effects are, as they ſay, That Opium ſuſpends and doth ſuppreſs the excretion of Excrements, and ſtops the paſſages of Urine, benums and enervates the Limbs, changes the natural Complexion into a leaden colour of the Face, cauſes cold Sweats, ſhort Breath, and difficult Reſpiration, and in progreſs of time a perturbation of the Senſes and Spirit, makes drowſie, and ſtupifies all the Animal and Vital Faculties. But we have ſhewed that whole Nations make uſe of crude Opium without any Corrective, and yet never fall into any of thoſe ſo decantated Accidents, except giddineſs, whereof they are as eaſily freed after the firſt impreſſion is paſt, as thoſe that have been inebriated with Beer, Wine, or *Aqua Vitæ.* Wherefore we may conclude with much more reaſon, that well depurated and well corrected Opium, after the way we have taught, ſhall not be capable to produce any of the evil Symptoms which commonly are feared from it, provided that thoſe who ſhall preſcribe it either to ſound or diſeaſed Bodies, exceed not the judicious Doſis, which at firſt muſt ever be ſmall, to avoid the ſurprizal of thoſe Accidents which might be occaſioned by the too great quantity: And moreover, conſidering that it is ever eaſie to add, but very difficult, if not impoſſible to diminiſh it when once let down into the ſtomach; let this be ſaid by the by upon the precautions of the Doſis, which ought to be from *gr.* j, to iiij, and vj *gr.* We add now the ſingular and noble Vertues wherewith this excellent Remedy is endowed: Which are firſt to appeaſe all irritations, inteſtine, ſeditious & violent commotions of the Body, diſquietings, rages, fury and madneſs of the *Archeus,* which is the principal Director of the Spirit of Life, and conſequently of health and ſickneſs; re-ſtabliſhing again peace and concord, and maintaining it between the Motor and motions of the Body: So that after it has ſoftly appeaſed the pain, and allayed the grief, it procures a ſoft and pleaſant ſleep, which reſtores Nature to its ſelf, and repairs the ſtrength of weak Patients brought low and attenuated by reaſon of pain, diſquiet and want of ſleep, and ſo without doubt is at leaſt half of the Cure of the Diſeaſe of what nature ſoever it be: For *Somnus reparat vires, feſſaque membra levat*; by which we may conclude, that, *Natura corroborata eſt omnium morborum medicatrix*; For which truly I can have a proof from *Paracelſus,* out of the fifth Book of his *Archidoxa,* in the Chapter where he treats of the *ſpecifick Anodine,* of which we have been moved to ſpeak by ſeveral cauſes, having had ſometimes in hand ſuch kind of Diſeaſes, as all our *Arcana's* have failed us in the Cure of them, except the only *ſpecifick Anodine,* which has produced wonderful effects, by us the leſs admired at, becauſe we know that by the Courſe and Law of Nature Water does quench Fire, and that in the ſame manner the *Anodine* extinguiſhes in all Ages the pains of Diſeaſes, and that for ſeveral Reaſons which we now omit. For that which ſleeps, is at reſt, naturally commits no fault: If then the *Paroxyſme* is ſet aſleep, it cannot be felt; but if it be awaked, his Operation goes on and will be felt. And in this Remedy have we one comfort more, that ſleep takes away and diſpels much grief, pain and melancholly. But it is to be noted here, that it is not neceſſary the man ſhould ſleep, but on the Diſeaſe it ſelf; wherefore we frame a Specifick which encounters the Diſeaſe alone, and combates not the whole man; as it muſt be underſtood of Feavers, where it is neceſſary to make uſe thereof; for are there things hurtful to the whole man, and diviſible in the diſeaſed man: which makes us to ſet upon the Diſeaſe, and ſo prepare the Specifick, that it may have no operation upon the Body. Theſe are the words of that great Philoſopher the wonderful *Paracelſus*, after which he delivers the Preparation of *Laudanum*, in the manner which followeth.

Laudanum, or the Specifick Anodine of Paracelſus.

℞ Of Corrected Opium ʒ j, Juyce of ſharp Oranges and Quinces well depurated *ana* ʒ vj. Cinnament and Cloves *ana* ʒ ß; Beat all to pouder, and mix it in a double Veſſel, and digeſt either in the Sun or Horſe-dung the ſpace of a month; this done, expreſs the Species, and put the Liquor again in your double or circular Veſſel, with addition of ℈ ß Musk, ℈ iij Ambergreaſe, ʒ ß Saffron, ℈ ß Salt of Coral, and as much of Pearls; put all this again to digeſt in the manner aforeſaid during one month; then opening the Veſſel, expreſs the Liquor, and reduce it into a liquid Extract, to which you ſhall add towards the end ℈ j ß of Quinteſſence of Gold; then evaporate your matter till it comes to a fit conſiſtency to make Pills: The Doſis whereof is from *gr.* ß, to iij or iv *gr.* Which is (ſaith he) the true Specifick Anodine, taking away and appeaſing all inward and outward pains, ſo that none of the Members is ſenſible thereof. You ſee that *Paracelſus* doth make uſe of acid Liquors for the diſſolution and digeſtion of Opium, which is the Baſis & Ground of this admirable Remedy, to which he had recourſe in the moſt urgent and difficult Diſeaſes. I cannot but add here yet what he ſayes in praiſe of *Anodines* and Soporiferous Remedies in General, when he ſpeaks of the Embryonated Sulphur in the firſt Book of his Phyſick, or Treatiſe of Natural Things. What *Arcanum* ought the Phyſitian more earneſtly wiſh for, then that which may aſſwage all griefs, and allay all heats? For he that ſhall enjoy it, ſhall be profeſſor of no leſs knowledge then *Apollo* himſelf, *Machaon* or *Podalyrius*; which is an Hyperbolical way of expreſſion he has to extol the Somniferous Remedies or *Anodins*.

And though the foregoing *Laudanum* be indifferently fit to be uſed by either Sex : It is neceſſary nevertheleſs we ſhould give a deſcription of an *Hyſterical Anodine* for ſuch Women as are troubled with fits of the Mother, and wherein no Muſt muſt be mixt ; for Ambergreaſe is not ſo hurtful and contrary to them, unleſs joyned with Musk or Civet, though many are of a contrary perſwaſion. This kind of *Laudanum* is prepared as followeth.

Hyſterical Laudanum for Womens Uſe.

℞ ʒ ij of Karabe or White Amber, ſuch as Beads uſe to be made of, to ʒ ß of very fine Myrrh ; ʒ j of the inward and diſſoluble ſubſtance of Caſtor ; reduce all to pouder, and make the Extract thereof in *B. M.* in a circulatory Veſſel with Alkalized Spirit of Wine, and changing with new Menſtruum ſo long, that the Species remain without colour in the Veſſel : Then filtrate all the Tinctures, and draw off your Spirit again in the Vapor of Balneo, till you have your Liquor in the conſiſtency of a Syrup ; which you are to circulate during the ſpace of fifteen dayes, with ʒ ij of Spirit of *Venus*, drawn in the manner we ſhall teach, when we come to ſpeak of Metals : Draw off again the Spirit in Aſhes ; then joyn to the remaining ſubſtance ʒ j of Extract of Plain Opium, diſſolved in ʒ iij of Juyce of Orange well depurated ; put it to evaporate on Aſhes in a ſlow fire until the whole be reduced to a ſolid Extract, that may be framed into Pills. The Maſs or Body of your *Laudanum* of all kinds muſt be kept in a Bladder anointed with Oyl or Aromatical Eſſences, as Cloves, Cinnament, Nutmeg for the plain *Laudanum*, and that of *Paracelſus*, and with that Carabe, or of Penny-royal for *hyſterical Laudanum* ; and put the Maſs, ſo folded, in a Tin or Silver Box. This kind of *Laudanum* may freely and without ſcruple be adminiſtred to Women or Maids without any fear of provoking the fits : But contrariwiſe this Remedy ſhall correct all the impurity, and whatſoever is amiſs in this part. It is alſo Specifick for either Sex againſt all Diſeaſes of the Brain, proceeding from what cauſe ſoever : but principally it is very recommendable to remove the hurtful and ſickly Idea's of Epilepticks, and hinder the Accidents of Epilepſie cauſed by the riſing of the Mother. And let no body fear in anywiſe that this Medicament ſhould ſtop the Lunary Courſes of Women, or their Purgations in Child-bed ; but to the contrary it will never fail to expel them, having firſt reſtored the natural Functions, and brought them again to their duty by procuring reſt, having firſt allayed all griefs,and conciliated ſleep: But that which above all is ſurprizing and leſs conceivable is, that the ſame Extract doth alſo, without any danger or trouble, ſtop the immoderate Courſes of Women, becauſe they proceed for the moſt part from certain harſh and noxious Seroſities which are by it compoſed, ſweetned and tempered in ſuch a manner, that this Remedy never diſappoints the hope of the Phyſitian, or expectation of the Patient. It is alſo of ſingular uſe in all other bloody Fluxes or Hæmorragies ariſing from what cauſe ſoever, as I am my ſelf in ſeveral occurrences an eye-witneſs thereof. The Doſis is from *gr.* j, to *gr.* iiij, for the moſt. But you are to note that it will ſooner operate diſſolved in ſome Liquor, then exhibited in Pills.

Laudanum againſt Dyſentery, and all ſort of Fluxes immoderate, as alſo againſt Agues.

* Or falſe Pelitory of *Spain.*

℞ Root of Aſclepias or Centauria Imperatoria or* Maſterwort, Angelica, Carline or Zonera dryed in the ſhade, Zedoaria, Biſtorta, or Snakeweed, Tormentil ℥ ij. Vipers Fleſh, ʒ iij. *Sanguis Draconis* very fine, or in drops ʒ i ß. Camphire ℥ j. Chincinna Rind, and Miſſeltoe of Oak *ana* ℥ ß. Reduce all to Pouders, which digeſt in *B. M.* in a double Veſſel circulatory with Alkohol of Wine four fingers high: The Spirit being well tincted, pour it out by inclination, and ſo continue your Extractions, until all the Tincture and Vertue of the Species be extracted; then ſtrain and filtrate the Tinctures, adding thereto ℥ i of plain extract of Opium, ʒ j Extract of Saffron, ℈ iiij of diſſolved Magiſtery of Red Coral, aud as much of Pearls; and ʒ ß of very good Ambergreaſe, diſſolved with ℈ ij of Oyl of Macis made by expreſſion, united or incorporated to ℥ j of fine Sugar in Pouder: Put all theſe in a Cucurbit to the Vapour of Balneo; and having applyed a Head, and exactly luted the Joynts, give a moderate fire to draw from it a Sudorifick, Cardiack and Alexiterial Spirit which has ſcarce its like: Then reduce by degrees the whole into a Maſs, which you ſhall keep for uſe in a Bladder, anointed with Oyl of Cloves. This *Laudanum* is a treaſure for ſuch as ſhall have it in their poſſeſſion in places where Dyſentery, Lientery and Malignant Fluxes ſhall rage, as it commonly doth in Armies. Moreover, it is a Soveraign Cordial and Preſervative in all dangerous Agues, as well intermittent as continual, in immoderate Watchings, importunate Griefs, and weariſome prickings of the Cramp or Tenaſmus. Thoſe that ſhall make uſe of this noble Remedy, muſt not fear to take of it before Purging, upon pretence you ſhould (as the Proverb ſayes) ſhut up the Wolf in the Sheep-fold; for there muſt ever a greater care be had to eaſe the pains, and procure the reſt of the Patient, then to the malignity of what is peccant or defective in quality or quantity; conſidering that even after this the Patient undergoes more chearfully the trouble of purging, becauſe he is refreſhed with reſt, and his ſtrength encreaſed. This *Laudanum* produces alſo wonderful effects in all Collicks in general, and particularly in that which is called *Convolvulus*, or the twitching of the Guts, which is nothing elſe but a motion againſt the nature of the Entrals carried upwards from the lower parts; whereas natural motion, which is called *Periſtatick* or *Conſecutive*, is performed from the upward parts tending downwards; and as the cauſe of the Diſeaſe is only either an irritation of the Spirits, or the malignity of matters kept in, this Remedy cures both at the ſame time, though it ſeems incredible to the apprehenſions of thoſe who condemn this practice; *Sed canis allatrat Lunæ, nec Luna movetur.* It is alſo very uſeful and ſingular for all Feavers, becauſe it brings their Criſis by Sweat and Urines after reſt; And moreover comforts and ſtrengthens the Ventricle and digeſtive Faculty, which alwayes in Fevers is depraved, and chiefly in Tertians, double-Tertians, double-Quartans, which oftentimes are too laſting for poor Patients, and throws them often from one gulfe and danger into another; that is to ſay, from a Feaver into a Dropſie. The Doſis is from *gr.* j, to iv, with obſervation ever to adminiſter before it a Clyſter made onely with new Stale or Urine, if the Patient be ſick of a Feaver, and not to give any in the day of the Paroxyſme or Aguiſh fit, unleſs it be in continual Feavers, and in all the kinds of Malignant ones; with this caution nevertheleſs, That it muſt be before the Fit ſeizes upon the Patient, if it be every day.

Of the Elaterium, or condenſated Juyce of Wild-Cucumber.

ELaterium is a very bitter Juice taken from the Fruit of Wild Cucumber, before it be broken and hath ſhed its Seed; that is to ſay, a little before it be ripe; which Juice is afterwards evaporated and condenſed in a thick Extract, which is ſaid to be one of the Juices which preſerves it ſelf the longeſt in its taſte and vertue: For ſome are of opinion that it laſts above two Years before it loſes any of its Faculties. By that which hath been already ſaid above touching the unripeneſs of Opium, we may eaſily conjecture that this alſo is not without its defects, ſince it is drawn from a Froth not yet brought to full perfection and maturity; and therefore that it is neceſſary to correct it, if we will have it to produce ſome effect, not hurtful in reſpect of its purgative vertue, which is very violent, inſomuch that it is capable to cauſe abortion or miſcarrying in Women; but as this violence & its immaturity may be corrected, and that it is a good Remedy capable of producing many good effects, to evacuate Venerean Sweats, and Dropſical Waters; we have thought fitting firſt to ſhew the way of purifying this condenſed Juice; then in the ſecond place, to teach how to make thereof a Legitimate Extract, which may without any danger be made uſe of in many ſtubborn and obſtinate Diſeaſes: This Remedy having in it ſelf great plenty of Volatile Salt, and a Sulphur which preſerves its exemplum from corruption, communicating unto it a Colliquative and Purgative Vertue.

Cleanſing and Depuration of the Elaterium.

THE Artiſt muſt diſſolve what quantity he pleaſes of this Juice in a ſufficient quantity of Phlegm of Vitriol ſharpened with a portion of its acid Spirit; then digeſt them together the ſpace of ſix weeks in the heat of Balneo; after this time ſtrain and expreſs the Diſſolution, then filtrate it to ſeparate all the craſſe and heterogenial impurities; after this evaporate the filtration in Aſhes in a moderate fire, until it comes to the conſiſtency of an Extract, which will be the depurated *Elaterium*, and in part corrected by reaſon of the acidity of Vitriol which has blunted the two active vertue thereof already, capable in this ſtate to be an Ingredient in Venerean Pills, or Pills for the Pox; if ſo be the Bodies that are to be purged be very ſtrong, and that ſome Aromatical Drugs be joyned to it to prevent its hurtfulneſs to the Stomach or the neighbouring parts. The Doſis is from *gr.* j, to vj. But we muſt ſhew another way better and more capable to act upon the Sulphur of this Juice, and its Terreſtrial Salt, crude and undigeſted Salt, to bring it to maturation, and make this Remedy more uſeful to ſuch as may have need thereof: which is performed in the following manner.

How

How the Extract of Elaterium is to be made.

PUT as much as you will of depurated *Elaterium* in a double or circulatory Glaſs-Veſſel, and pour upon of very pure Spirit of Wine, acuated with ℈ j of Salt of *Sennertus*, for each ℥ of Spirit, till your Glaſs be half full; then having luted it very exactly, place it in a vaporous Bath in ſawings of Wood, or Sawduſt, of a moderate heat, during the ſpace of three whole Weeks; this time being over, open the Veſſel and filtrate the Tincture; to which joyn ℈ j of diſſoluble Magiſtery of Coral, ℈ ß of Oyl of Nutmegs expreſſed and tempered with Sugar in pouder, this proportion to each ℥ j of *Elaterium*; then draw back the Spirit in a vaporous Bath to the conſiſtency of a ſoft Extract, which afterwards put in a Wooden Bowl, or white or gray Earthen Diſh; and ſoftly evaporate the ſame in Aſhes to the conſiſtency of a Maſs fit to work into Pills, which are to be preſerved in a Bladder anointed with Oyl of Cloves. This Extract is a great and very Soveraign Remedy to evacuate all ſuperfluous and malignant Seroſities which do infect the Sinews and Membranous parts: Wherefore it may be with very good ſucceſs adminiſtred in all Diſeaſes of the Joynts, Atrophie's, Leucophlegmaty, Gout, Pox, Dropſie, and all like affections: But chiefly when ſome excellent Arcanum is mixed therewith drawn from Mercury, as we ſhall hereafter teach the manner of it. The Doſis is from *gr.* ij, to xij, provided the Patient remember to take the Evening of that Day in which he is Purg'd, a Julep with ℥ iv of Water of the Juice of Chicory; ℥ j ß of Syrup of Gillyflower, and v or vj drops of very good volatile Spirit of *Venus*.

SECT.

SECTION IX.

Of Oyl.

THE Phyſitians which have written of Pharmacy, have ever made uſe of the bare name of *Oyle*, or common Oyl, when they would denote that Oyl which is drawn from Olives by expreſſion; which name it may vindicate with a very good Title to its ſelf, in regard it is not only of very great uſe in Phyſick outwardly applyed, but becauſe alſo it is a good Aliment and Remedy inwardly applyed. And as this Section is dedicated to ſpeak of Oyl, we will chuſe none other but that which the Ancient and Modern Phyſicians have made uſe of; conſidering alſo that Chymiſtry works only upon natural products, to correct their defects, and exalt them in vertue; therefore we ſhall have nothing elſe to do here upon Oyl, then to ſeparate ſome groſs and undigeſted moiſtneſs which hinders its penetration, and ſo to render it more ſubtil and more active. For Oyl of Olive, to ſpeak properly, is nothing elſe but the imperfect and undigeſted Sulphur of that Fruit, which abounds with much volatile Salt mixt with a fat Viſcoſity, as it appears by its congelation, it curdling in the cold, and its inflammation. We ſhall then only make two preparations thereof, which ſhall be a type and model whereby to work upon all other ſorts of Oyl, when the Artiſt hath a mind to depurate them, and render them more ſubtil and more penetrating. The firſt ſhall be that Operation by which is made that Oyl which is called *The Philoſophers Oyl*, which Operation is very ſuitable to the Work; For he that was the firſt Inventer of it, could not be otherwiſe then very well acquainted with the Rareſt Secrets of the Nobleſt Philoſophy, having joyned their Practice to Theory; and left us, as the Fruits of his Study and Work, the manner of making an Oyl, which is wonderful in its Vertues. The ſecond Operation will be the manner of diſtilling common Oyl, to render it more durable, and leſs obnoxious to fuliginous Emanations, that it may be more uſefully employed to the ſervice of thoſe Lamps, with which Chymiſts are uſed to entertain the heat of their Lamp-furnace: as alſo to uſe upon ſeveral occaſions where it may be ſerviceable, both for inward and outward Diſeaſes.

How

How the Oyl of Philoſophers is to be Prepared.

Take old Tiles or Bricks, and having broken them into ſmall pieces of the bigneſs of Philberd, heat them glowing red in a Wind-Furnace with Coals, *ſtratum ſuper ſtratum*, ordering it ſo that the firſt and laſt Bed be of Coals: And when they are come to the higheſt colour of redneſs, have a Peuter or Braſs Baſon, with a cover well fitted to ſhut it cloſe and put out the flame, when the pieces of Brick or Tile ſhall be thrown glowing hot in the Oyl, which you may take off about the quantity of ℔ v or vj of old clear Oyl; theſe pieces of Brick or Tile muſt be taken with Pincers, and one after another be put in the Oyl, and the Cover applyed to quench the flame which will riſe, until all your Oyl be ſpent and dried up: Then grind to pouder theſe pieces ſo imbibed and impregnated with Oyl, and mix to them equal weight of decrepitated Salt, or as much of the *Caput Mortuum* of *Aqua Fortis*, or Colchotar; then having put the matter in a well-luted Retort in a cloſe Reverberatory Furnace, fit it to a large Receiver alſo well luted; cover the Furnace, then give it fire by degrees, until the drops begin to follow one after another, and that the Oyl comes into the Recipient in ſhapes of Vapours and obſcure Clouds; then encreaſe it, and entertain it even with flame of very dry Wood until the Recipient begins to grow clean of it ſelf, at which ſign ceaſe the fire and let all cool: and the Veſſels being open, you ſhall know that what was almoſt without odor and inſipid, has much altered its nature; for the volatile Salt of the Oyl is ſo much exalted and changed, that it is almoſt impoſſible to hold the Noſe over the Recipient by reaſon of the ſubtil Spirits of this Salt, which gives to this diſtilled Oyl an unpleaſant odour. The one half of the Oyl may be laid aſide without Rectifying, for it may be uſeful in many occurrences where there is no neceſſity to have it ſo ſubtil. Take afterwards the other half, and mix it with common Aſhes or Colchotar, until it be reduced to a Paſte, which you ſhall model into Pills, and put into a Glaſs Retort, whoſe neck inwardly muſt be very well cleanſed; then place it in a Sand-Furnace with its Recipient, and give a gradual fire, continuing until you have drawn off all the Oyl, which ſhall be very ſubtil and fluid, and penetrating with a wonderful activity.

Theſe two Oyls are good applyed outwardly: But if you intend to uſe it inwardly, take ℔ ß of Rectified Oyl, and mix it with as much Salt of Tartar, and ℔ ij White-Wine; put all this mixture into a low Cucurbit, where you muſt have a Head or Still very fitly and exactly joynted, and ſo likewiſe luted; and give it a convenient fire until all the Vapours begin to riſe, which will be mingled with Oil, Water and Spirit; continue your fire until no part of the Oil more ſhall aſcend; then ſeparate the remaining Oil in the Cucurbit, and add it to that of the firſt diſtillation which has not been rectified, ſo ſhall you have the *true Philoſophers Oil*, ſo called: And which being brought to this height and perfection of ſubtilty, deſerves well that appellation, by reaſon of its Rare Vertue, and the noble effects it produces, both inwardly and outwardly.

The firſt Oil drawn and not rectified, doth diſſolve, digeſt, mollifie and bring to maturation all ſchirrous and hard Tumors, and chiefly ſuch as grow without pain; Reſolves potently all flatuous and cold Oedema's or wateriſh ſwellings, and all other hard and cold tumors, in whatſoever place of the body ſeated, peculiarly thoſe that are about the Joynts, whoſe action they check and ſuſpend. The ſecond Oil which hath been rectified, is alſo very good to the ſame purpoſe, for it digeſts with much more ſpeed: Above all, it hath a wonderful Operation to diſſipate all Tophus's, Schirroſities and Nodoſities, and cold Gout, mixt with a little Spirit of Salt, and very ſubtil Spirit of Wine. This mixture is alſo very ſalutiferous to all thoſe that have any member fallen into Atrophy, or benummed with Palſey; for it doth inſinuate it ſelf into the parts, and conſumes and diſſipates the ſlime, which did hinder the illuſtration and flowing of the Spirits upon the parts by their Obſtruction, or rather reſuſcitates life, and reanimates the Spirits in the members already deprived of it, and as it were half dead. But there is no compariſon between the firſt and ſecond, and the third ſort; for it is ſo ſubtil, that even as if it were light it ſelf, it penetrates the parts in an inſtant; wherefore they that ſhall make uſe of it, muſt proceed with judgment, and obſerve the true proportion: for if it be inwardly adminiſtred againſt Plague, or Wind-Cholick; the Doſis muſt not exceed eight drops at the moſt: And for the Plague, it muſt be exhibited in the diſtillation of Roots of Lagworth or Butter-bur with White-wine; and for the Cholick in Saſſafras, diſtilled Water: there muſt alſo a precaution be uſed, when it ſhall be outwardly applyed; for if it be uſed for the cold Gout, there muſt be Camphire diſſolved in it; and it muſt be applyed upon the part only with a Feather, and the ſame not ſtroak'd above three times with it; But this is not yet the beſt uſe and talent of this Oil, which ſeems particularly to be dedicated to the Matrix: All the bad Symptoms and Irrations whereof it doth allay, in caſe it be internally adminiſtred in Savine, or *Matricarial Mother*; it removes all the Obſtructions thereof, drives away all impurities, if applyed to the neck of it, where it is immediately volatized, by reaſon of the opening of the Uterus or Womb, to expel thence whatſoever is hurtful: It may be made alſo to penetrate in the very body of the Womb, with an Inſtrument made for the purpoſe, having a Channel or Conduct-pipe proportioned to the neck of the Matrix; the end whereof muſt be very round, and perforated with many holes; and in the cavity of it, a round Ball, (but opened alſo in the top, to contain the Oil, and exhale it) which being exactly fitted to the Pipe, may be conveighed by a Screw, and made to aſcend from the bottom by degrees, till it come to the top, where this ſubtil Oil will be volatized by the heat of the Matrix working upon it, and thus receiving the Vapours thereof, whereby all defects will be corrected. This deſcription will ſuffice for thoſe that are acquainted with the myſteries of our Art; for to ſay more, would neither be neceſſary nor lawful. I ſhall end with only ſaying, That this Oil matures and ripens, in a very ſhort time, all kind of Abſceſſes, Botches and Boyls; but above all, the Peſtilential Sore, if it be outwardly applyed thereupon, at the ſame time that it is inwardly exhibited to the Patient, he being very carefully covered to be brought to Sweat.

How the Oyl muſt be Defecated.

MIX ℔ viij of the Oil very clear with ℔ij of Salt of *Venus* in a Glaſs Retort; and being put in Sand, diſtil it ſlowly with a gradual heat, until nothing more comes from it; then draw off the Salt again from within the Retort with warm Water, filtrate and evaporate till it be dry, then in a Crucible make it glowing; and when it ſhall almoſt be cooled again, grind it to pouder in a warm Morter, and mix it again in the Retort with the Oil already diſſolved, and draw off again upon Sand as before, which you muſt reiterate to a third time, to have a very ſubtil Oil, and laſting to the Lamp, not eaſie to be put out, if you have only care of the weak, yeelding a leſs thick and black ſmoak, and conſequently leſs ſoot; but it is not only fit for thoſe purpoſes, but moreover very good to reſolve and mollifie, as the foregoing Oil, to which in a manner it may be ſubſtituted, when there ſhall be any need of it for external applications or outward griefs, in delicate and ſqeamiſh Patients, which are not capable to bear the unpleaſant ſmell of the Philoſophers Oil; but it is not ſo penetrating and ſo efficacious. It may alſo be uſed in the boiling of Plaiſters and Ointments, becauſe it doth not partake any more of this excrementitious moiſture, which doth, for the moſt part, cauſe the putrefaction and colliquation frequent in Wounds and Ulcers.

SECTION X.

Of Gummy Drops or Reſins.

GUmmy Drops or Reſins are ſubſtances proceeding from fat and Oleaginous Vegetables, and coming forth out of the ſame either ſpontaneouſly and naturally, or after ſome inciſion made in the Plant; their conſiſtency is various; for ſome are ſoft, and others hard: the ſoft are, all kinds of Turpentine, and ſoft Pitch or Tar; the hard are, ***Gum. Elemi***, ***Anime***, ***Tacamacha***, ***Olibanum***, or Frankincenſe, and all other the like kinds. We will give two examples of the manner of diſtilling; the one of ſoft or liquid Reſin, the other of ſolid; which ſhall be common Turpentine, or Venice and ***Gum. Elemi***; that by the manner of working upon theſe, the Artiſt may be inſtructed how to proceed upon all others.

Of the Diſtillation of Common Turpentine.

WE rather chuſe to take Common Turpentine, then a more ſubtil kind, becauſe this in a manner is more natural, and more fully poſſeſſes the mercurial and balſamick parts, then the other ſorts: It is this which *Paracelſus* calls *Reſina de botin*; and though ſome are of Opinion that it is inferior, and yeelds in vertue to that of *Cyprus* or *Venice*, we are nevertheleſs of another Judgment: for although the other be clearer and more pure, this hath, notwithſtanding, ſome volatile mercurial Salt, which is not abundantly found in others; the proceſs thereof working upon it, is as followeth. Put ℔ vi of Common Turpentine, which is the Gum of the Latrix Tree or Shrub, in a great and capacious Retort of Glaſs, in which the two third parts muſt remain void of matter or thereabouts, becauſe the heat cauſes the Turpentine to riſe, and ſo if leſs crouded, might run in the body out of the neck of the Retort, inſtead of riſing in Cloud and Vapours as it ought to do: which to procure, you muſt put in the empty ſpace of the Retort, above the Turpentine, a good handful of Flax or Tow, that it might hinder the ebullition and riſing of matter: Put your Retort in Sand, and having fitted it to a Receiver, whoſe Joynts are to be luted with Paper and Meal-pap, give it firſt a ſlow fire, until the drops of the acide and mercurial Spirit begin to fall; and keep it in this tune, until you perceive that the ethereal and ſubtil Oil begins to drop, and a ſmall cloudy and white Vapour begins to appear, and condenſe it ſelf into a ſubtil Oil in the Recipient; then increaſe the fire by little and little, until the drops and white Cloud do ceaſe, which is a token that the yellow will quickly follow; wherefore then change your Recipient, that you may have all theſe ſubſtances ſevered: Continue your fire increaſing, until the falling drops begin to be of a very deep Yellow; which when you ſee, change again your Recipient, and give the laſt degree of fire, that all the body of the Turpentine may riſe into Vapours, which will condenſe into a Balſamick Oil of a tenacious and ſlow ſubſtance, and as red as Blood; ſo ſhal you have wrought all the ſubſtance of this Reſin in four ſeveral Liquors, differing not in colour only, but alſo in vertue; for there is an aqueous Liquor ſwimming above the ethereal and ſubtil Oil, which is commonly called *Spirit of Turpentine*, but improperly; for Chymiſts do never call Spirit, whatſoever is fat, unctious and inflammable: This Spirit is nothing elſe properly, but the volatile and mercurial Salt of Turpentine; for it is acid and ſharp, and a Philoſophical diſſolvent of Chryſtals, Stones and Shells, as ſome will have: but as there are many others, which in worth and vertue for this purpoſe challenge the precedency of it; we are not of their Opinion, but we may nevertheleſs ſay in truth, That this Spirit deſerves ſome kind of eſteem, by reaſon of its Balſamick Aſtriction, which doth no hurt or prejudice to the nervous and membranous parts, as all other acid or ſharp Spirits, not partaking of this Balſamick Vertue, do. For though the Dogmaticks think to correct Turpentine with their pretended Lotion: the truth is, doing thus, they take away from it all the pureſt of its deterſive and mundifying Faculty: For as the ethereal and ſubtil Oil which Turpentine contains in it ſelf, doth lenifie, and ſweeten by its balſamick quality, ſo likewiſe doth at the ſame time that ſubtil and deterſive Salt, mundifying ſtrongly, and being, as it were, a precurſor to the other, which ſweetens and tempers that, which the firſt had as it were irritated. Thence muſt the Artiſt conclude, that this Spirit is good and uſeful to cleanſe the viſcoſities, impurities, and other ill diſpoſitions of the Lungs, Ureteries, Spermatick Veſſels, and Kernels of the *Proſtatæ* and *Paraſtatæ*, when any irritation of thoſe parts doth happen, or any other unclean matter lies lurking in the ſinuoſities and ſecret corners of thoſe parts, which can neither be removed nor corrected by the help of mundifying and balſamick Remedies, capable of keeping and preſerving their ſtrength without any alteration, to conveigh it along with themſelves into the parts which are in need of it: For we muſt make a general note of very great importance for that part of Phyſick, which is to take indication of the effects of Remedies, chiefly of thoſe that are to be imployed for the Diſeaſes of the Kidneys and Bladder; for all thoſe Medicaments which are endowed with a ſulphureous, balſamick and volatile Salt, preſerve their inviolable vertue in the digeſtion it ſelf, and carry it even into the diſeaſed parts, as the odour and ſmell of the Urine doth witneſs, no leſs then the colour; by which it evidently appears, that no ill alteration is made by it; but that contrariwiſe, the Remedy hath overcome and had the Victory, ſince it hath paſſed through ſo many places without ſuffering corruption; but inſtead thereof, hath rather advanced to ſome a greater degree of perfection by natural heat: For the Urine of ſuch as have taken Turpentine, or its ethereal Oil, hath an evident ſmell of Violet or Iris Root: And to give a more convincing proof thereof, you muſt know, that it is not the Turpentine only which produces this good and pleaſant ſmell; for the Nutmeg, Macis, Cloves, Juniper-Berries, Parſly, Fennel, Dock-Roots or Carrots, Parſnips, do all communicate the ſame ſmell of Violet to Urine, by reaſon of their balſamick and ſulphureous volatile vertue, which is exalted and improved by the Spirit and Salt of the Urine; A myſtery not worthy of ſmall conſideration for ſuch as will take the pains to examine Remedies by the effects of natural digeſtions, to know how far they may extend the ſphere of their activity. But that which is yet more to be wondred at, is, that Turpentine diſſolved in a Clyſter, by the vertue of its ethereal Oil, penetrates thorow all the membranous and nervous parts, where it imprints the character of its own vertue, and forces an aſſent to this truth by the pleaſant ſmell it leaves in the Urine; by which it appears, that there is no danger to adminiſter Turpentime, or any Remedies in the compoſition whereof it enters into wounded Perſons, either by the Mouth or by Clyſters, becauſe the effect thereof can never be but very ſucceſful, and redound to the good of the Patient, and reputation of the Phyſitian or Surgeon. It muſt alſo be acknowledged, that as thoſe ſubſtances which exalt themſelves into a good ſmell, give a teſtimony thereby of the good they are capable to do: So contrariwiſe, thoſe who degenerate into an ill ſmell, and diſturb the Oeconomy of the Kidneys and Bladder, ſhow that they have ſome ill quality in themſelves, which is to be ſhunned, as much as the other embraced and put in uſe. We thought our ſelves obliged to ſay this, That thoſe who are ever in fear of hot or cold qualities, without examining the ſpecifick vertue of the mixt, they will imploy, may more and more ſhake off and root out their prejudicate opinions.

The vertue of the ethereal Oil of Turpentine, called commonly, but improperly, *Eſſence or Spirit of Turpentine*, is great; for it ſubtilly penetrates, cuts, reſolves, and attenuates the muſcilagineous and tartarous viſcoſities of the Kidneys and Bladder, and provokes Urine: It is alſo ſingular againſt the Cough, and other affections of the Lungs, proceeding from ſome tartarous matter, againſt obſtructions of the Spleen and Mother, againſt Strangury and difficulty of Urine, to expel the Sand in Kidneys or Bladder, againſt *Gonorrheas*, and finally againſt Ulcers of the Neck of the Bladder, and all the other parts of Generation being infected with the venerosity of Venerean Diſeaſes. The Doſis is from iv drops to xx in appropriated Liquors.

The Yellow Oil, and Balſom, which is nothing elſe but the Red Oil, differ not very much in vertue, therefore they may either joyntly or ſeſeverally be applied: for they do heat, attenuate, mundify and conſolidate equally; which makes them very uſeful aud fit to be imployed with very good ſucceſs for reſtoring members benummed or contracted by cold and froſt, for ſchirrous Tumors, old running and rotten Sores, Gang reen, Chilblanes, whoſe Sores it cures and conſolidates ſpeedily and perfectly; but the Balſom ſooner then the Oil.

But becauſe the Æthereal Oil which is drawn from Common Turpentine, is not ſo ſubtil, nor pleaſing to the ſmell or taſte, as that which is diſtilled from the Venetian in a Cucurbit; we muſt teach how the Artiſt ſhall well and exactly perform this Operation. To this end muſt he take ℔ viij of Venice Turpentine of the cleareſt, moſt florid and odoriferous: for all theſe marks betoken that it is new, and conſequently better; put it then in the Cucurbit or Glaſs-body with one head; and pour upon it xij pints of Roſe-Water, and viij pints of White-Wine, adding thereto xxx Lemons cut in thin ſlices; then cover your Veſſel, and give a fire of the tenor of that with which you diſtil *Aqua Vitæ*; and thus with one Operation ſhall you perform three things: For in the firſt place you ſhall draw an ethereal very ſubtil Oil, and of great efficacy, and fragrous ſmell: Secondly, You ſhall have a very excellent diuretical Spirit: And in the third place, a Water which may be uſed to adminiſter the Oil in it, being firſt mixt with a little Sugar in Pouder, and may be uſed in the ſame diſtillation. I do not queſtion but that many will ſay, That this is a very chargeable way of procuring Oil of Turpentine, and that ſo much trouble is needleſs, ſince one pound of it may be had cheaper then Venice Turpentine does coſt. But let thoſe that be of this opinion conſult their own reaſon, and conſider the ſmell and vertue of the one and the other; let them make tryal thereof, and they will then perceive the difference between both: Therefore I exhort the *Chymical Apothecary* never to regard coſt or labour, becauſe either of theſe two ſpared will load his Conſcience, or leſſen his Reputation. Our Artiſt then to proceed, muſt be careful to change the Recipient, when there ſhall be about ℔ iv or v of Liquor in it, to ſave the trouble of rectifying the Spirit; and the diſtillation being ended, and the Veſſels cooled, he will find the Maſs of Colophonie in the bottom of it, which is nothing elſe but the body of the Turpentine deprived of its ethereal Oil; it muſt be ſlowly melted in Water, to ſtrain it afterwards through a Cloth or Tamy, to purifie and ſever it from the ſlices of Lemon. And as Coliphonie is nothing elſe but a portion of the Reſin, ſo may it lawfully challenge the ſame vertues, except that it is not ſo penetrating or active; for it heats and dries, agglutinates and conſolidates; and as it eaſily melts and incorporates with unctuous and fat ſubſtances, ſo is the principal uſe of it to bear a part in the compoſition of Plaiſters and Salves; it may alſo be uſed in Opiat's inſtead of decocted Turpentine: but I rather adviſe that Turpentine ſhould be uſed, which has neither been boiled nor diſtilled, that the Balſamick Faculty thereof may be in it ſtill.

How Gum Elemy is to be Diſtilled.

THat which in the Shops is called *Gum Elemy*, is the drop or Reſin of a kind of Cedar which grows in *Ethiopia:* The beſt is that which is of clear and whitiſh colour, mixt with ſome ſmall yellow parts or ſtreaks, reduced into a Maſs, and being made to burn or flame, yeelds a ſmell which is not unpleaſant. You muſt beat your *Gum Elemy* into Pouder, and mix it with three parts of pounded Bricks, and one of decrepitated Salt; and put all in a Retort, which muſt be placed in a Reverberatory cloſe Furnace, upon an earthen Pot covered, turned upſide down, with a little Sand on it; then fit to it exactly a Receiver, and give it a gradual fire, until it yeelds no more Oil, a part of which may be kept without rectifying: but diſtil the other mixt with iij p. of decrepitated Salt, and make your rectification of it in a Retort in Sand. Either of theſe two Oils is not to be taken inwardly; but they are ſpecifick and ſingular for all diſeaſes and griefs of Sinews, chiefly againſt Palſie and contraction of Nerves, which renders the parts lame and uſeleſs. They attenuate, reſolve and diſſipate all catarrhous flatuous, and dolorifick matter; for this Gum is very Balſamick. Upon the ſame manner and method may be diſtilled the Oil *Tacamalaca*, *Anima*, and *Caranna*, becauſe all theſe Roots come very near to that of *Elemy*.

SECTION XI.

Of Gum Reſins, &c.

GUM Reſins participate and come near the nature of Gums, in that they are nothing elſe but the drop of certain Trees, and may with great eaſe be diſſolved in Oil, and in Water alſo, but more difficultly, becauſe they participate more of the ſulphureous oily and inflammable ſubſtance, then of the Saline, which is the ſooneſt diſſoluble in Water. They that come near this Category, or are in it, are Camphir, Maſtick, Ladanum, Benjuin, Styrax, Myrrh, and others, which it would be needleſs here to rehearſe: We will then declare a method of the work that may be made upon the chief and moſt uſeful of them.

Gums ſo properly called, are nothing elſe but concrete Liquors eaſily diſſolved in Water, or other wateriſh and moiſt Menſtruums, as Wine and Vinegar: They are of two kinds, The firſt doth conſiſt of a volatile Salt, predominant and ſomewhat ſulphureous, and of a gummy viſcous and clammy Juice, proceeding from Plants, Shrubs, and feculaceous Trees, as Ammoniak, Galbanum, Opopanax, Euphorbium, Sagapenum, Aſſa fætida, and ſeveral others: The ſecond are purely gummous and miſcilagineous, proceeding alſo from ſome Plants and Fruit-Trees, as Gum-Arabick, Gum of Plum and Cherry-Trees, and Tragacinth: Theſe cannot ſuffer diſtillation, having none or little of Salt and Sulphur in themſelves.

The

The Diſtillation of Ladanum.

Though this Gum be not much in uſe, yet it has many excellent properties; and I can ſay confidently, that it is but want of having made the Anatomy of it, and of Experience, that it has been ſo much neglected: for it is impoſſible that thoſe that are better acquainted with it ſhould not make uſe of it: It is a Gum Reſin gathered upon the Leaves of a Shrub called *Ciſtus Ledon*; the beſt is that which is of a blackiſh green, eaſie to crumble, and yet as eaſily made into Pills, working it between the fingers, inflammable, and yeelding a ſweet and pleaſant ſmell in the burning. But there is this conſiderable in it, that though Ladanum be inflammable, yet will it not eaſily mix with Oils or other fat and unctuous ſubſtances: Their uſe is, that it abounds with volatile Salt, and a portion of herbaceous extract, which hinders its union, and cauſes it to crumble: And this is a note of its principal Vertue, becauſe this ſulphureous Salt aſcends in the diſtillation, and is turned into an Oil, which is a Specifick for many Diſeaſes; it is thus prepared.

℞ ℔ j Ladanum made in Rolls, and not of that which is in Maſs or Lump; pouder it and mix with ℔ iij of Bol, reduced in Lump with *Aqua Vitæ*; work all this into Pellets, which after they are gently dried, put in a Retort, and place it in Sand, joyning to it a fit Recipient well luted; then give a gradual fire, and continue it till all the Liquor be come forth; and the Veſſels being cooled, take out what you find in the Recipient, and ſever the Oil from the Spirit by a Funnel, and keep it for uſe. You may give from ij drops of the Oil, and xij of the Spirit, in a little warm Wine, to open and attenuate the groſs matters whereby Catharr's are generated: It is alſo a commendable Remedy againſt Dyſentery: But it is a true ſpecifick to allay the fits and irritations of the Mother, if the ſame Doſis be adminiſtred in Mugwort or Mother-wort-Water, or Penny-Royal.

How to work upon Benjuin.

Benjuin is one of the beſt and nobleſt Gums which is found in the Kingdom of Vegetables, as much for its ſweet and pleaſant ſmell, which outwardly is uſed in perfumes, as principally for the eſſential vertues it poſſeſſes in it ſelf, proceeding from the abundance of volatile ſulphureous

Salt, whereof we ſhall give an evident proof by the following Operations: for it might very well be ſaid, to ſpeak properly of Benjuin, that it is a dry Balſom; it is brought from *Samaria* and *Sion*, and grows on tall Trees, whereof in convenient time the Rind is opened, to give way to this precious Gum: the beſt is that which in ſome kind is tranſparent, mixt with white granes and ſtreaks, in a yellowiſh red maſs or lump, apt to crumble, not very heavy, melting eaſily, and of a very ſweet and pleaſant odour. We ſhall give the proceſs of the following Operations upon it, for the ſatisfaction of the Artiſt, *viz.* Of drawing the Tincture, Magiſtery, Flowers, Oyl, Manna or Cryſtal, and Mercurial Spirit, and that Balſom or groſs Oil of it.

To make the Tincture and Magiſtery of Benjuin.

℞ ℥ ij of Benjuin of the beſt note, reduce it to a very ſubtil Pouder, which being ſearced through a ſilk Tamy, that all the heterogeneous ſubſtances may be ſeparated, put this Pouder in a Matraſs, and pour upon it ℥ vi of Alkohal of Wine prepared upon Salt of *Venus*, becauſe if there was the leaſt of Phlegm mingled with it, the Operation might be checkt thereby: Agitate nimbly the matter, and keep the Matreſs in a little of lukewarm Water, and the Benjuin will diſſolve in a very ſhort time, which is an infallible Argument to prove that this Reſin contains a very pure and ſubtil ſulphureous volatile Salt: for if it held a groſs and unctuous Sulphur, the Alkohol of Wine could make but a ſimple extraction of it, and not an intire and perfect diſſolution: if it alſo did participate of a groſs and earthly muſcilage, it would by no means hold proportion, nor agree in matter with the cleanlineſs and ſubtilty of our vital Spirit, neith erwith that of the Spirit of Wine. For as the Remedies extracted from Benjuin are made uſe of for the Diſeaſes of the Breaſt and Lungs, it muſt follow of neceſſity, that the matter whereof they are extracted, is compoſed of very ſubtil, volatile and balſamick Parts, that they may be guided and appropriated by the help of the Archeus to the digeſtions of the diſeaſed parts, *Servata & illibata ſuæ virtutis poteſtate.* The diſſolution which ſhall be red and tranſparent, muſt be filtrated in a very dry Vial: for if there was the leaſt moiſture or aquoſity, it would inſtantly turn the Tincture into white, and precipitate it to a Magiſtery. Keep half of the Tincture in a Vial by it ſelf, which muſt be very well ſtopt, to uſe upon occaſion. But if you will have very well depurated Benjuin, precipitate the other part of the diſſolution in very clear common Water; and when you have drawn off the Spirit of Wine again, in a ſmall Cucurbit in the Vapour of Balneo, the Magiſtery will be left in the bottom; then draw off the Water by inclination, and waſh this pure Benjuin with Roſe Water, and dry it ſoftly; we will give it the name of *Magiſtery*, though ſomewhat improperly, becauſe many Authors have ſo. The Tincture is not much more properly ſo named; for it is, to ſay truth, but a diſſolution: The vertue whereof is nevertheleſs encreaſed, by reaſon of the excellency and nobleneſs of the Menſtruum; wherefore it may lawfully be uſed both inwardly and outwardly. Outwardly applyed, it is a wonderful Coſmetick, cleanſing the skin both of the hands and face beyond any other, takeing away all ſpots, dries Pimples in the face, and takes them away, as all other tumors, buds or redneſs in the skin, reſolving patiently all harſh and malignant ſeroſities which the outward Air hinders from tranſpiring, becauſe the face is not covered as are the other parts of the body; and the matter being thus kept in between the fleſh and skin, it cauſes thoſe ſeveral defects of it. To make a right uſe of this Tincture, apply it towards bed-time upon all the places where you find need, and the next day waſh the place with Barley-water wherein Veal hath boiled, which you ſhall turn to a Milk colour, with ſome few drops of the Tincture of Benjuin; and then wipe either face or hands (as you have applyed it) with a very dry and ſoft linnen cloth. But beſides this outward uſe in repairing ſuch defects of the skin, if after being raiſed, you uſe at any time waſhing with the white Water made by this Tincture, it will prevent for the future all pimples, raiſing of the skin, or redneſs, which often happens by ill preparation of the Soap-Bal, and the lixivial Salt, which has ever ſomething of fierineſs that enters in the compoſition of it. Inwardly it may be given for Aſtma's and ſhort Breath; and to Phyſical Perſons, or ſuch as are troubled with old Coughs, from ij drops to x or xij, in a new raw Egg, or a ſpoonful of Syrup of Hyſſop, made after the deſcription which we have given above: It may be given in the Morning faſting, and the Evening, two hours before Supper. As for the Magiſtery, it may alſo be adminiſtred in new laid Eggs, or ſome Pectoral Conſerve, from iv grains, to vx and xx, for thoſe who are offended by the taſte and Swirit of Wine: It may alſo be mixed in Electuaries and Tablets; they that will make good waſhing-balls, and ſuch as may never endanger by any ill accident the skin of thoſe they will trim, muſt prepare and waſh carefully their Soap, to diveſt it from the ill quality of the lixivial Salt, and leave in it only the mundifying and abſterſive vertue; and when it is brought to that paſs, waſh it,and feed it a good while with Tincture of Benjuin,adding thereto ℥ ß of the Magiſtery to each pound of Soap; after which they ſhall frame their Balls of the bigneſs of ℥ij, and let them dry ſoftly; add, if they are pleaſed to add, a little of Musk and Ambergreaſe: they may boaſt to have waſhing-balls better for the perfume and ſweetneſs, and more uſeful for preſerving and cleanſing the skin both of face and hands, then thoſe of Bolonia ſo much accounted of.

To make the Flowers of Benjuin.

AS Benjuin Flowers are excellent in their Vertue, ſo muſt an Artiſt be careful to beſtow upon them a good Preparation: for which Reaſon, we ſhall demonſtrate two wayes thereof: The firſt more plain, becauſe it may be done at all times, as neceſſity ſhall require. The ſecond to be reſerv'd, when we ſhall treat of the *Diſtillation of Benjuin.* As for this firſt manner, take onely a good *Germane Crucible*, round and ſomething high, wherein put ℥ij of Benjuin reduced to Pouder, place it in Sand upon a Capſula, and cover it with a long ſharp Cap of a good double blew Paper. ſtrong and well ſtiffened, the ſaid Cap being proportionated in its Baſis to the Orifice or Mouth of the Crucible: After this, give your fire by degrees,and when you perceive the Vapours of the Benjuin beginning to riſe, take away the ſaid Cap, and put a new one of the ſame matter and proportion in the room, that you may have time to take away with a Feather the Flowers ſublimated in the firſt, and loſe not thoſe which ſhall riſe while the Crucible ſhall remain uncovered; and this work continue till all the volatile ſulphureous Salt of the Benjuin be ſublimated in flowers; they are to be given from three grains to half a ſcruple in the ſame manner, and for the ſame Diſeaſes, as the Tincture and Magiſtery: It is by this Operation that our Artiſt ſhall clearly know, that Benjuin poſſeſſes a volatile ſulphureous Salt, very ſubtil and penetrating: For as ſoon as there is heat enough to drive it out from its Body, it invades the Noſe, Eyes and Breſt, which it irritates in ſuch a wiſe, as to provoke Sneeſing, Tears and Coughing, by reaſon of that ſpirituous and ſubtil quickneſs of the Salt, wherein lies all the power and activity of the Benjuin.

The Diſtillation of it.

Yields many fine preparations at once, provided the Artiſt be skilful and vigilant, and not ſparing of what is uſeful and neceſſary to do it punctually and to the purpoſe; for the *Chymical Apothecary* muſt not entertain a falſe perſwaſion, as many have done, and do yet at this day, that it is enough to take the bottom and dregs of the Drugſters Box, to perform his Operation withal, being a very great abſurdity to yeeld to this perſwaſion; conſidering, that beſides that the Drugs can never give what they have not, becauſe the Salt and Spirit lies ever hid in the pureſt part; it ſhould alſo run this hazard, that all the vertue and goodneſs thereof might be overcome and abſorbed by the heterogenity of the impure: They then that will duly quit themſelves of their dnty in the profeſſion of *Spagyrical Pharmacy*, muſt have as great a regard in the well chuſing of their Stuffs, as if they were to work their Maſter-piece; becauſe that beſides they ſhould loſe the diſtillable matter, they would alſo trifle away their time, and ſpend it vainly with their Fire and Veſſels: Let this be ſaid once for all by the by, but chiefly in this place, where it is abſolutely required, that the matter we work upon be cleanly, that ſomething analogous may alſo come forth out of the ſame: For in the firſt place there will be drawn a Spirit of Wine, impregnated with a portion of the volatile, ſulphureous and ſpiritual Salt of the Benjuin. Secondly, There ſhall come forth the pureſt of the ſaid volatile Salt, which will cleave to the neck of the Retort: And in the third place, a fat and butyrous matter, which is nothing elſe but the groſſeſt part of the Salt and Sulphur. Fourthly, There ſhall diſtil from it ſome ſmall quantity of Mercurial acid Spirit. Fifthly, A little of Yellow Oil of Hyacinth colour, of a very good ſmell. And finally, at the giving of the laſt fire, there will come forth a Balſom ſomewhat blackiſh in colour.

To perform this ample diſtillation artificially and methodically chuſe ℔ j of the moſt pure and excellent Benjuin, reduce it to Pouder, and put it to digeſt in a double or circulatory Veſſel in the Vapour of Balneo, with ℔ iv of Alkohol of Wine, during the ſpace of five natural daies; which elapſed, pour all in a great Glaſs Retort; in which you ſhall put ℔ j of pure and clean Sand, and ℔ ß of Scales of Iron, ſuch as fall from the Anvil; all theſe matters not filling above a third part of the Veſſel, which muſt have a long and broad Neck, and the Orifice of a Thumb-Diameter, then place it in Aſhes mixt with Sand, fitting to it a middle ſize Recipient, dry and clean; the joints of which will be ſufficiently luted with plain Bladder ſteeped in Water, that it may be removed with more eaſe when you are obliged to change your Recipient: All theſe circumſtances being exactly obſerved, give the fire ſlowly by degrees, ſo as the drops may follow ſlowly on the other without heating the Recipient,and having a care not to make more haſte, otherwiſe you ſhould ruine all your work; for as our experienced *Paracelſus* ſaith, *Omnis præcipitatio a Diabolo.* Above all things then, our Artiſt muſt be patient and judicious, unleſs he will be compelled to be ſo to his coſt and confuſion after this due warning: And when he ſhall gueſs that all the Spirit of Wine is almoſt all come forth, he muſt have a particular care of encreaſing gently the fire, and taking notice when the Flowers or Cryſtal ſhall begin to coagulate themſelves in the neck of the Retort, to change then the Recipient, which muſt not be luted, becauſe it muſt oft be taken of either,to take away the Flowers and Cryſtals which are gathered there,or to draw them with a ſtick, made for the purpoſe, from the neck of the Retort,leſt they ſhould ſtop it altogether, which would cauſe the breaking of the Retort, the Vapours having no free paſſage left to come forth: When all the firſt Flowers, which are the whiteſt and ſubtileſt, ſhall be drawn off, and the butyrous ſubſtance begins to appear, then muſt you again lute the Retort to your Recipient with a Bladder, and increaſe a little the fire, that all the acid and mercurial Liquor may follow the Butter; that done, change again your Recipient,to receive the true Benjuin Oil, which will be of a Yellow colour, ſomewhat reſembling Hyacinth; but there will be but very little of it, and of a fragrant odour: The Artiſt therefore muſt take care to obſerve the change of colour; for where the drops appear red, it is the true inſtant of time to ſubſtitute a new Recipient, to receive a thick and dark Balſom by the laſt action and expreſſion of the fire. It remains only now to ſay ſomething of the uſes and vertues of the ſeveral ſubſtances, which the Benjuin doth furniſh us with in this diſtillation: And to begin by the Spirit, we ſay, that the ſame alone, without mixture or adding any more of our Gum Reſin above deſcribed, may ſerve for a very excellent Coſmetick, becauſe already filled and impregnated with part of the volatile Salt, which is properly the ſubſtance in which the deterſive, mundifying and reſolutive ſtrength and faculty of the Benjuin is placed; it hath even a more penetrating vertue then the Tincture, and that becauſe the Tincture is laden with the unctuous body of the Benjuin,which ſtops the pores, and dries the skin. This Spirit is alſo more potent and capable to draw the true Tincture of Benjuin; but not of corporeal or unprepared Benjuin, but of that which is diveſted of its ſubtil and groſs Oil, and its acid Spirit: For you muſt take ʒij of the Flowers Cryſtals of Benjuin, and ℥ ß of the butyrous matter, which muſt be put in a double or digeſting Veſſel, pouring upon ℥ ij of the aforeſaid Spirit, and ſo let them digeſt ſome ſpace of time together, and the Spirit ſhall be tinged with a Yellow colour, which will be nothing elſe but the extract and addition of the volatile Salt and Sulphur graduated, and exalted to the higheſt degree of their perfection: Filtrate the Liquor, and you ſhall find in the bottom of the Veſſel a white guin, which may be of very good uſe in Perfumes. This Tincture hath in a Compendium all the noble vertues of the Benjuin. The Doſis is from two drops to xij in Saſſafras Water, Syrup of Hyſſop, or ſome Conſerve in Bolus, for all diſeaſes and griefs of the Breſt above rehearſed. But as we promiſed above, that we would here exhibit the method to make Benjuin Flowers in greater quantity and leſs time, then thoſe which may be made by ſublimation in the Crucible, we will teach how to perform it; and it is only thus, Diſſolve ℥ j of the firſt Butter of Benjuin, and of the whiteſt, which immediately follows the Cryſtals or Flowers in boiling Water, and filtrate quickly the Liquor through gray Paper, and the Flowers will inſtantly be coagulated, even under the hand: then draw back again the whitiſh Water by inclination, and let it ſettle, and you ſhall have in the bottom a Magiſtery of no leſs efficacy, then that which is made by precipitation of the Tincture, or groſs diſſolution: Let the Flowers dry, and the Magiſtery ſlowly and leaſurely between the double Paper, and keep it for uſe. The Cryſtals, which are properly the Flowers and volatile Salt of the Benjuin, are ſudorifick, and a great ſpecifick againſt the Great POX, if it be given from v. *gr.* to xx, in a Glaſs of Tincture of Saſſafras made with White-Wine, or in a Glaſs of Decoction of *Salſaperilla, China & Guaiacum rind.* for it is a ſearcher, which in an interim penetrates the whole Body; It may alſo be exhibited in a leſs Doſis, as the firſt ſublimated Flowers: The Oil is an excellent Vulnerary, and noble Perfume. The blackiſh Balſom which is clammy and viſcous, is a great mundifier of Ulcers, wherefore it may very conveniently be mixt with Ointments and Plaiſters: Some mix it amongſt *Peruvian* Balſom, to falſifie and encreaſe its quantity; and it is one of the falſifications of moſt difficult diſcovery. The Benjuin yeelds ſo little of an acid Spirit, that it is not worthy mentioning its uſe; nevertheleſs it may be applyed to the ſame purpoſes, as we have ſaid above, the Spirit of Turpentine would ſerve: They that are moved with a curioſity to make an excellent mixture of unctious perfume for Skins and Gloves, may diſſolve

Butter of Benjuin, and ſome part of the Flowers in Oil of Benjuin, it will make a very good and fit body to receive the Musk, Ambergreaſe and Civet, according to the proportion they will allow, and the ſtrength of ſcent they intend to give to their Skins.

To Prepare an excellent Angelical Water, and the Maſs or Paſte, which is called the Spaniſh Paſte.

℞ ℥ iv of very pure Benjuin, ℥ j of Styrax in drops, ℥ j of good Cloves, ʒ ij of Ambergreaſe, ʒ j of Levantine Musk, and ℈ j of very fine Civet; grind and beat all to a very ſubtil Pouder in a Marble Mortar; add to it the ſuperficial and ſubtil rind of xij Citrons or Lemons, and put all in a double or digeſtive Veſſel, and pour on it ℔ j ß of very good Roſe-Water, and as much Muſcat Wine very clear, or ſome other White-Wine clear, odoriferous and quick; cover your Veſſel with its blind head, and place it in *B. M.* giving a fire of digeſtion for viij dayes, if it be Winter; or expoſe the ſame Veſſel in the reverberation of the Solar Rayes, if Summer: Then opening your Veſſel, put aſide the Water which you ſhall find coloured, and of a very excellent Odour to perfume Table-Linnen, for the uſe of Day or Night, as alſo to make a vaporous Caſſolet, by exhaling a little of the ſame Water in the place appointed to eat, ſleep, or entertain company at your choice. But you muſt heat the Maſs of Paſte which is ſetled in the bottom, to malax and work it together with your hands anointed with Orange or Jeſſemin Oil, or Orange-flower, Cloves, Cinnament, according as they that will make uſe of it, are better pleaſed with either of theſe ſmells: For in this reſpect the Capriccio's and Humours are as various, as in matters of taſte: There may alſo (if it be for a ſick body) a reſpect be had to the intention of the Phyſitian, and that of the Patient, becauſe the ſame ſmells will reſtore and comfort the one, and offend the other, and chiefly among Women; therefore you may herein uſe your own diſcretion, and therefore as well add as diminiſh of your own Ingredients, according to the neceſſity and circumſtances. The Maſs being thus by malaxation rendred ſoft and tractable, you may frame it into Bracelets ſmelling or ſweet Paſtes, or perpetual Caſſolets, which are made in the manner following: Have a Silver Box with a double bottom, the one diſtant from the other the thickneſs of a Thumb, let there be within or without the Box a Channel or Pipe running through the ſecond bottom, that you may inject ſuch Water as you think fit, in the

void.

voide ſpace which is between the two bottoms. This Box thus framed, muſt be filled with the Paſte or odoriferous Maſs, the height of a thumb; then ſhut it up with a cover fitted to it in a convex Figure, or dome-like, bored with holes all about to tranſmit the vaporous Perfume and exhalation the eaſier: And when you will ſet this Caſſolet to work, fit the bottom with Roſe-Water, Wine, or plain Water, according as your deſign is, either ſtrongly or ſoftly to affect the ſmell; and thus ſet on a moderate fire, which will act ſlowly upon the perfumed Maſs, and raiſe by little and little its pleaſant fragrancy, gently, and without interruption. You may alſo diſſolve, in all kind of performances which you will make of this Paſte in Oil of Benjuin, giving it ſuch a colour as you ſhall like beſt, as alſo encreaſe or leſſen the ſtrength and ſweetneſs of the perfume, more or leſs, according as you ſhall make your mixture. Let no body think, we run here out of our Text, in teaching the Doſis or Mixture of Perfumes, but be perſwaded rather, that they are abſolutely eſſential to our Treatiſe, ſince there happen many accidents in the life of Man, to which no Remedy can be applyed but by the ſmell; ſo that this Example which we have given of preparing one, which is both pleaſant and uſeful, may be a Rule and a Pattern to prepare thoſe which ſhall onely be intended for phyſical uſe, and the help of ſick Patients.

Of Camphire.

MAny have thought Camphire to be a Bituminous Subſtance; but they that have more truly writ concerning their *Indian* Travels in the Eaſt Country and *China*, do teach us, that it is a Reſinous Drop or Gum; the beſt kind whereof comes from *Borneo*; and that which follows in goodneſs, from the Kingdom of *China*, and the Province of *Chineſe*, diſtilling from a great Tree ſomewhat like unto our Wall-nut in the body or ſtock, whereof it gathers to a head. The *Indian* Phyſitians are not of the Opinion of thoſe that fear the uſe thereof, by reaſon of the cold quality which is attributed to it; for they uſe it with very great ſucceſs, as a true Divine Remedy; and certainly we muſt acknowledge Camphire to be one of the moſt wonderful productions of Nature, and the neareſt of all reſembling Light; for as we have often ſaid, that the volatile Salt is the laſt fold and cover that wraps the Spirit, and that Spirit is nothing elſe but a concretion of Light, and Light nothing elſe but an inviſible Fire, and a true emanation of the Divinity it ſelf; ſo can we ſay, that Camphire is the only natural production, wherein the hand of Nature has more excellently diſcovered one of its nobleſt Operations, in ſeparating a pure, volatile, ſulphureous Salt from a ſubſtance which ſeems to be altogether uncapable thereof; and what is more to be wondred at, is, that the skill of the moſt knowing Artiſt cannot imitate but at a very great diſtance this natural preparation; ſince the moſt perfect Maſter-pieces of their Art, are onely volatile Salts, which for the moſt part they compare to Camphire, when they think to have brought them to the higheſt piece of their perfection; but they never come near to the ſubtilty, quickneſs, tranſparency and whiteneſs of this unparallel'd mixt, Nature, it ſeems, intending to have it ſelf alone all the glory of its perfection, nobleneſs and vertue: for when ever Chymical Artiſts have endeavoured to raiſe and exalt this Gum to an Oil, or ſome Analogical Liquor, it has ever returned to a body again, vaniſht away, or loſt the pureſt or nobleſt part of its ſtrength or efficacy; we muſt then rather ſit here as Admirers then Operators, ſince there is nothing in this ſubſtance to be corrected, and that Camphire of it ſelf is ſufficiently pure, ſubtile and volatile, to be reduced from Power into Act, without vainly endeavouring by an ignorant and proud temerity to correct a thing which God hath created, and Nature produced with ſo many perfections. To prove our Aſſertion, it will be neceſſary to give here the Character and Notes of true Camphire, teach one of the nobleſt uſes of it, and make ſome Obſervations thereupon, before we come to any of the true Operations uſually made upon this noble Reſin: The Camphire then ought to be very white, tranſparent as Cryſtal, very pure, without ſpot and mixture of any adventitious ſubſtance, of a quick and penetrating ſmell, crumbling betwixt the fingers, and almoſt not to be quenched when once kindled, for it burns in the Water it ſelf: And to diſcover the better, if it be ſophiſticated, have a Rye Loaf coming juſt from the Oven; open it, and make a hole in the middle, in which put a piece of Camphire of the bigneſs of a Walnut; then clap the pieces again cloſe together, and let it ſo ſtand a while warm, and this Tryal will evidently make appear the truth of the ſubſtance or ſophiſtication: for if the Camphire be pure, it will all melt and vaniſh away; but if mixt with any heterogeneous matter, it will burn; or to ſpeak more properly, the Camphire will vaniſh away, and the groſs matter which did falſifie it, ſhall appear in ſubſtance whole in the Bread, and as it were roaſted and dryed up. But to declare yet more evidently the volatile quality of this mixt, and its ſubtile and penetrative vertue, we muſt ſay that it is an approved Remedy againſt Tertian Agues, if in a knot of Taffety you put ſome of the pureſt about the neck of the Patient from ℈ iij to ℈ iv, according to Age, letting the ſame hang upon the Breſt, towards the upper Orifice of the Stomach, where the firſt ſenſations of joy or grief are raiſed: The knot muſt be worn nine dayes, without intermiſſion, and the ninth day thrown, without examining what remains in, in a running Water, and that without omitting any of theſe circumſtances, if you look for a recovery. But ſome may perhaps Object, that this number of Nine is ſuperſtitious, as alſo the condition not to look in the Knot, and likewiſe to throw it in running Water. To which we Anſwer, That all theſe Obſervations are neceſſary, purely Phyſical, and ſuteable to the Nature of the Remedy and Diſeaſe: for though Camphire be very volatile, yet muſt there be a more violent heat then that of Man to volatilize it under the ſpace of nine dayes: And it is requiſite it ſhould be volatiliz'd to produce its effect, which is performed by the ſmell of the Patient, who breaths and draws it continually; by which means this volatile Salt makes an impreſſion upon the natural Spirits, which drive away by degrees by a ſenſible tranſpiration or inſenſible, or by Urine, the ferment of the Ague, and by this ſlow operation deſtroys the action and violence thereof. As for not looking in the Knot, and throwing of it into running Water, it is an obſervation depending on a higher and more abſtruſe Philoſophy, which ſhall tell you that as the Camphire hath blotted out, and defaced the Character and Idea of the Ague by the irradiation of its Magnetical Vertue, ſo hath the Spirit of Life imprinted the Character and Idea of the Diſeaſe in the Knot whence the Remedy did flow; and therefore muſt this Idea be removed, as far as is poſſible from the formerly ſick Perſon, leſt the irradiation and flowing of the ſubtil Spirits, which do continually proceed from their bodies, may cauſe the ſaid Spirits to be touched again, and infected by the venom and contagion of the Idea of the ſickneſs, which the Water carries away, and deſtroys, and overcomes in ſuch a manner that the Patient becomes wholly freed and exempted from it, without any fear of relapſe: For there is no body can be ignorant, that a Candle newly put out, can eaſily be kindled again, if another burning be brought near unto it, though kept at ſome diſtance, and not touching it with her flame; The ſame will happen to them that ſhall have the curioſity to look into the Knot, after they have removed it from their neck, and have neglected to throw it at the ſame inſtant in the running Water. We might alſo find another Reaſon in the ſtrength of imagination working in the Patient; but though that may do very much, it would be needleſs, ſince we ſhall evidence hereafter, that Remedies prepared out of Camphire, work the ſame effect when taken inwardly.

We muſt come now to the neceſſary marks, for proof of what we have ſaid above: For the tryal of Camphire in new Rye-bread, and the Cure of the Tertian Ague, are infallibe ſigns of its ſubtility and quick penetration, whereby it appears that thoſe that believe it to be cold, are poſſeſſed with a falſe and vain Philoſophy, taken from old Authors who had no skill or knowledge thereof, further then what a hear-ſay could ſuggeſt them, wherein they are followed by their Diſciples: But, ſay they, Camphire cannot be otherwiſe then cold, becauſe it hinders Generation, and doth even hinder Erection, and all other irritations neceſſary to the Act of it. But ſuppoſe it to be as true as it is falſe, it doth not follow therefore that Camphire ſhould be cold: and granting that any body making a tryal thereof, and by long uſe of it both inwardly and outwardly, that effect of impotency and barrenneſs ſhould follow in him: it would much rather be an argument of its heat, and of the ſubtil quickneſs of its volatile ſulphureous Salt, keeping ſtill the Pores open, and continually reſolving either ſenſibly or inſenſibly the ſpirituous exhalations, which are abſolutely neceſſary to the Act of Generation and Conception. The old *Romans* knew better then theſe Chimerical Philoſophers, that thoſe ſubſtances which have a quick and penetrating ſmell do enervate, ſince by one of their Laws of the XII Tables, they did forbid their Souldiers, *Mentham in Bello nec edere nec cedere*. Is it not alſo a daily experiment, that *Agnus Caſtus* and Rue decreaſe the Seed, hinder erection and the heats of Luſt, by the ſame reaſon as Camphire, though held by every body for hot Remedies; which are proof more then invincible of the weakneſs of this inſipid Doctrine, which alwayes cleaves to the appearances and outward effects of things, without reflecting and turning the edge of their ſpeculation upon the true cauſe. *Chymiſtry* is only capable of this noble and diſcerning knowledge; upon which ground Chymical Phyſitians have found it expedient to make uſe of Camphire in Peſtilential and Malignant Diſeaſes; as alſo in Agues, whether they adminiſter it inwardly, or apply it outwardly in Epithems and Frontals. But above all things, it is uſed with a wonderful ſucceſs in Suffocations and Fits of the Mother, if you burn ℈ j, or ʒ ß, even to ʒ j, in a Glaſs of Balm Water, or for want of it, in plain Water; by which it appears evidently, that it is the meer vertue of Camphire which produces the effect. We would not forbear to clear this truth by this our Narrative, to remove the ſcruple of thoſe who fear to make uſe of Camphire; for as I am very well perſwaded of its real vertue by experience, I thought my ſelf obliged to recommend the uſe thereof, that the Publick may not be fruſtrated of the good and advantage it may receive by it. When we have ſaid, that our Artiſt could not much operate upon Camphire without deſtroying it, we have ſaid truth; for he can add nothing to its perfection, and can but waſte much of its ſubſtance, alwayes uſeful and full of vertue: There is neverthelefs ſome little Operation neceſſary to reduce it into liquor, and mix it indiviſibly with other ſubſtances, which cannot eaſily keep it, unleſs you proceed in your work with Circumſpection and Method; and becauſe ſome hitherto have thought it impoſſible to reduce the ſubſtance of it into Oil; we will ſhow nevertheleſs that *Labor improbus omnia vincit*; but it ſhall yeeld but a little quantity and proportion. We will propound two Examples, the one of Camphire Oil without addition of the other Oil; the other with addition of two neceſſary Oils, which will increaſe more and more its vertue.

How to work the plain Oil of Camphire.

℞ ℔ ß of Camphire reduced to Pouder, and mix it with ℔ j ß of Bol. Then put this mixture in a Glaſs Retort, and diſtill in Sand, with a well graduated fire, and the Camphire will come forth in the form of Butter. Take of this butyrous ſubſtance, and mix it with its double weight of Tartar very well calcinated; put this mixture in a Cucurbit, and pour upon it Spirit of Wine, the height of three or four fingers, and diſtil it in *B. M.* with all requiſite precautions. But above all things, you muſt have a careful eye to obſerve when the Camphire ſhall begin to ſublimate: for as ſoon as you ſee it appear in the Still head, take away the fire, and let the Veſſels cool: But the Spirit of Wine you ſhall find in the Recipient in a narrow neck Bottle, and pour upon diſtilled Rain-Water, till you ſee the mixture of both turn as white as Milk; ſo the Spirit of Wine being weakened by the mixture of Water, you ſhall perceive the Oil of Camphire, which was incorporated and united to this Ethereal Spirit, to ſwim over the Liquor. Continue in the ſame manner to pour Spirit of Wine upon the matter remaining in the Cucurbit, and diſtil with the ſame circumſpection as before, until no more of the Oil doth ſeparate and riſe above the Spirit of Wine and Rain-Water mixed. You may keep of this Spirit of Wine impregnated with the Oil of Camphire; for it is the true Camphorated Spirit of Wine, and not that wherein Camphire hath meerly been diſſolved. There is moſt commonly but the eight part of Camphire converted into Oil. This Oil is an excellent Remedy, for it reſiſts Putrefaction and Venoms; wherefore it may be exhibited in Plagues, malignant Diſeaſes, and continual or intermittent Feavers. The Doſis is from one drop to ſix in ſome appropriated Liquor: The Camphorated Spirit of Wine, is impregnated with the ſame vertues, but the Doſis muſt be bigger; for it may be given from ℈ ß to ℥ j inwardly; and the outward uſe is no way leſs wonderful: for the Oil and Spirit are good to ſtop the Gangreen, and appeaſe the Tooth-ach; as likewiſe to allay the grief of the Gout, particularly Sciatick. Note alſo, that you muſt not loſe the Spirit of Wine mixt with the diſtilled Rain-Water, but draw it off by diſtillation in *B. M.* ſince it may be uſed again, either for this ſame Operation, or for ſome others: You muſt not neither loſe the Salt of Tartar which remains in the Cucurbite, diſſolve it onely with warm Water, filtrate, evaporate and dry it, to uſe it to all other purpoſes as before.

The manner of Preparing Compounded Oil of Camphire.

Put in a Matraſs about ℔ j of Spirit of Niter, ℥ vj of Camphire; ſtop the Matraſs with another, that the neck of one may get into the other; lute the Joints with Bladder and Whites of Eggs; then put it to digeſt in the Vapour of Balneo, until the Camphire be reſolved into an Oil, which ſhall ſwim above the Spirit; then ſeparate this Oil, and mix it with ℥ iv of rectified Oil of Amber, and as much Juniper Oil; digeſt them together that they may unite; then diſtil in Aſhes by a Retort three times conſecutively; after which rectifie your Choliotar of Vitriol, until the Oil comes forth clear, depurated and fluid, and the Camphire wholly deprived from body, and turned into an Oil. It is Sudorifick very ſecure to expel the Malignity of the Plague, Spotted Feavors, and Poiſon it ſelf: It is alſo a preſervative Remedy in time of Plague, both inwardly and outwardly applyed: If inwardly, this Oil muſt be reduced in a diſſoluble Balſom with Sugar in Pouder, and every morning muſt you take three drops in a little Wine: But outwardly, Rub your Temples and Wriſts at the beating of the Artery, and thus ſhall it act concurrently both within and without; and ſo ſhall this noble Remedy ſufficiently ſtrengthen Spirits, that they may not be infected by the venom and poyſon of the Plague. But the uſe of this Oil cannot ſufficiently be recommended for thoſe that are ſubject to Hyſterical Paſſions: For this Remedy penetrates as in a moment, and appeaſes all the irritations of the Mother. The Doſis is from two drops to ſix or eight. But you muſt note moreover, that this Oil is a very notable Specifick in the Epilepſie, both in Young and Old, and chiefly in that kind which proceeds from the Mother.

The manner of Diſtilling the Gum Ammoniack.

WE take this Gum for an Example of the diſtillation of other Gums, becauſe it is endowed with many noble Medicinal Faculties, and abounds more then the others in Spirit, and in Oil: This Gum is taken from a feculaceous Plant growing in that part of *Africa*, where formerly was the Temple of *Jupiter Ammon*, whence it had alſo the name, to draw an Oil and Spirit from it, which may be recommendable by their vertue; It muſt be very well choſen. The chief notes of good Ammoniack, are, that it be yellow outwardly, and white inwardly, as Crums or Granes Olibanum, of a ſmell drawing to that of Caſtoreum, bitter in taſte, and eaſily growing ſoft, if wrought a while between the fingers. But this Gum well choſen in a Glaſs Retort filled to a third part, and fit it in an Iron Pot ſo adapted in the furnace, that you may have Regiſters in the Corners; the bottom of the Retort muſt not touch the Iron, but it muſt be propped with three pieces of Earth, as if it were a Tree foot, that the Oil and Spirit may contract no Empyreuma or ſmoakiſh taſte, if it be poſſible; cover the Pot with its own covering, and lute it ſo, that nothing but the warm Air may encompaſs the Retort, to expel the Vapors into the Recipient, which muſt be exactly luted without fillets of Linnen dipt in Whites of Eggs, and ſtrowed Pouder of Quick Lime; Graduate this fire as you ſhall ſee occaſion, and continue your diſtillation till nothing more comes out; and when all is cooled, ſeparate the Oil from the acid Liquor, and rectifie each by it ſelf in Aſhes, to apply to their uſes. The Oil and Spirit may be taken inwardly from iv drops to xv & xx, in White Wine or Saſſafras, or a little Centaury Water, to open Obſtructions of the parts of the inward Ventricle, and chiefly of the Spleen. It is alſo a ſpecifick Remedy to reſolve & evacuate by Sweat and Urine, the ſlime and tartarous Viſcoſities, which create and cauſe pains in the Joints: wherefore it may freely be given to thoſe that are ſubject to the Gout and Rheumatiſm; as thoſe likewiſe whoſe Breaſt is laden with clammineſs and thick Phlegms, hindering the motion of the Lungs: The Spirit, above all, is of ſingular uſe to free the Matrix from its impurities, as alſo to cleanſe the Kidneys and Bladder from Slime and Sand; The Oil is alſo excellent to apply outwardly upon the Region of the Spleen, whereby to ſuſtain it, and reſtore to its natural ſtate, when it is grown ſchirrous and hard: It is likewiſe very efficacious to reſolve Tophus's, Hardneſſes and Calloſities of the Feet and Hands of ſuch as have been troubled with the Gout in thoſe parts of the Body. It is alſo one of the beſt Remedies that can be applied to the Kings Evil, provided the Patient may be Purged at the ſame time alternatively with ſome good Antimonial and Mercurial Remedy.

And thus ſhall we conclude this Chapter of Vegetables, in which we think to have ſufficiently inſtructed the Artiſt with a Method to guide him in ſuch works as he ſhall find himſelf obliged to undertake upon ſubſtances, whereof this noble and ample Family of Nature doth conſiſt, whether led by a mean curioſitie to encreaſe his Knowledge and Experience, or to prepare Remedies which he may uſe and dedicate to the publick good and ſervice. We muſt follow the ſame Rules and Precepts upon Minerals, which we will, God willing, perform in the following Chapter, with all the intelligibility and punctuality poſſible and requiſite.

CHAP. X.

Of Minerals, and their Chymical Preparation.

WE are at laſt arrived to the laſt Chapter of our Chymical Treatiſe, which will contain the manner of working, which our Artiſt is to follow as a Model and Example in any Operation he will undertake upon any part of the Minerals Family, the proper part and task, as ſome are of Opinion, of Chymiſtry. For although we have ſhewed how many noble Remedies this Art may extract from Animals and Vegetables; yet all that ſeems but a play in reſpect of the Operations which muſt be performed, to open and diſunite what Nature hath ſo ſtrongly bound, and, as it were, fixed in the ſubſtances whereof Minerals do conſiſt and are compoſed. All this will better appear when we come to ſpeak of it particularly: for though in the Theorical part of this Treatiſe we have already ſpoken of their Generation, yet it is neceſſary that we ſhould make a ſubdiviſion of this ample and numerous Head, and declare the Subalternate Genders it contains, as alſo the Species whereof they conſiſt; and that alſo we make a deſcription of their Original, and aſſign their Definitions, and declare their conſtitutive parts, that thereby the truth and nobleneſs of Subſtances may better be conceived, as alſo the difficulty of their Works, which muſt needs aſtoniſh and confound thoſe that pretend to the Name and Title of *Naturaliſts*, or Searchers of Nature, and yet are ignorant of the moſt part of her nobleſt and choiſeſt Actions: For what could ſhe produce more perfect, and leſs corruptible then Gold, more white then Pearls, more reſplendent and ſhining then Ruby and Diamond, more wonderful then the Loadſtone, and more capable of ſurprizing and puzling the Judgement and Learning of theſe conceited and unexperienced Philoſophers, then all the ſubſtances whereof this Family of Minerals is compoſed? But that which is no leſs ſtrange, and yet is a particular weakneſs of ignorance, is, That theſe learned Ones are not contented to neglect the Anatomy and ſearch of Minerals, but give themſelves a liberty and freedom to deſpiſe and calumniate both dead and living, who led by a noble deſire of Knowledge, have applyed, and do apply themſelves to ſo neceſſary a work, and of ſo great advantage for the improvement of Phyſick; and think to have ſufficiently done when they advance and declare, that all theſe Mineral Bodies have no correſpondence or analogy either with Man, or the Diſeaſes which ſeize on him, and hinder the joy of his Life: But we ſhall, in the ſequel of this Diſcourſe, God willing, evince the contrary, and evidently ſhow, that the ignorance only of the nobleſt handling of Phyſick, and their uncapacity of undertaking the work, have been the occaſion of their contradictions, which are but vain and importunate, ſince Phyſick, Pharmacy and Surgery, cannot at all be without thoſe noble Remedies that are extracted from Minerals by the Operations of Chymiſtry.

The Mineral Kingdom contains under it ſelf ſeveral Families or Subalternate Genders, which are firſt Earths, containing ſeveral kinds of Species, but chiefly thoſe wherein from all time hath ſhined and been conſpicuous ſome particular vertue; thoſe which are properly called Mineral and Medicinal *Earths*, are all the *kinds of Bolus*, as *Armenian or Oriental and common*; all *the ſigillated Earths*, as *that of Turky*, or of *the Iſland Lemnos*, the *Sileſian*, and that of *Blois in France*, *Chalk*, *Plaiſter*, *Oker*, *Red-Earth and Tripoly*.

Secondly, This Kingdom contains Mineral Stones, divided into precious, and leſs precious; the precious are, *Amethyſt*, *Cordaline*, *Topaz*, *Granate*, *Hyacinth*, *Oriental Ruby*, *Saphir*, *Emerauld*; to which, though improperly enough is added, *the Pearl*, *Coral*, *Oriental and Occidental Bezoar*; and amongſt all theſe which we have related, Phyſick and Pharmacy do by excellency name the precious Fragments, Granate, Hyacinth, Saphire, Emerald and Cornaline. The *leſs precious are*, *Hail-ſtone*, *Alabaſter*, *Alumen Plumune, or feather'd Alum*, *Lapis Armenius, or the Armenian-ſtone*; *Lapis Calaminaris, or Beryſtall*; *Emathite, or Blood ſtone*; *Lapis Judaicus*, *Lapis Lazuli*, *Linx-ſtone*, *Loadſtone*, *Marble*, *Nephritick-ſtone*, *Oſteocella—Pumice-ſtone*, *Slate*, *Serpentine-ſtone*, *Peable*, *Smiris or Emerod*, *Lapis Specularis*, *Spunge and Chalk*.

In the third Claſſis are the Mettals, and thoſe Subſtances which have any reſemblance or affinity with them, and the natural or artificial Excrements of Metals. The Metals are, *Gold*, *Silver*, *Copper*, *Iron*, *Tin* and *Lead*. The *Subſtances of near affinity*, *Mercury or Quick-Silver*, *Cinnabar or Vermilion and Antimony*. The *natural excrements of Metals are*, *Marcaſſites or middle-Minerals*; *as Zinck*, *Biſmuthum*, *Cobolt*, *and metallick and natural Cadmia*. Artificial, are the two kinds of *Litharg*, *Pompholix*, and *Tutty*.

The fourth place in this Mineral Kingdom is aſſigned to *Salts*, whereof there are two ſorts, Natural and Artificial; *Natural* are the *common Salt*, *Salt Gem and Vitriol*; Artificial are, *Alloms*, *Armoniack and Salt-Peter*, which may alſo be called *Natural*.

In the fifth and laſt place, Minerals contain under them the *ſulphureous mixts*, which *are Sulphur or Brimſtone*, *Arſenick*, *Auripigmentum*, *Realgar*, *Ambergreeſe*, *Karabe or Yellow Amber*, *Spermaceti*, *Aſphaltum*, *Naptha*, *Petroly*, *Sea-coal*, *Jet*, which ſome would have to be black Karabe or Amber.

We will chuſe in each of theſe Subalternate Families what is more conſiderable in them, and will allow to each of the Subſtances a particular Section by it ſelf; in which, as much as in us lies, we ſhall explicate the nature of it, and upon each of theſe declare the nobleſt and chiefeſt manner of working which our ſtudy and experience hath gained us; that both the knowledge of the thing, and the operation upon it, may ſerve to our Artiſt as a Guide and Rule, as much to help them in the internal and external knowledge of Minerals, as a Model for all Chymical and Phyſical Operations, which are neceſſary to draw from them thoſe precious and noble Remedies that God and Nature have placed in it: For as concerning vulgar and mechanical Operations which are performed upon the Mines of Metals and Minerals, they that have any curioſity in this particular, may find them in ſuch Authors as have written thereof fundamentally and *ex profeſſo*. Let no body alſo look here, or ſeek for Sophiſtications, white or red works upon Metals; for beſides that they do not belong to a Diſcourſe of Medicinal and Pharmaceutick Chymiſtry, it ſufficeth to our Artiſt, and ſerves well enough his turn, if he knows enough of it, to take heed and beware himſelf of the ordinary Cheat of thoſe who do profeſs it, and who are but too numerous at this day; but moreover, we ſhould do a prejudice to the Publick, in teaching that which is but too much practiſed by wicked and leud idle perſons, though well principled and vertuous men might make no ill uſe thereof.

SECTION I.

Of Earths.

WE begin by the Earth, as being the Principle of all Phyſical Generations; for it is the common Mother, not only of Animals and Vegetables, but it is alſo much more properly of Minerals, ſince her Boſom is as it were their Matrix, in the Center whereof they are bred and generated. We do not pretend to ſpeak here of Earth as it is a ſimple and pure Element, not to be conceived but intellectually; we will neither treat of it as of the Earth which is impregnated with the Soul of the World, and which, though dead of it ſelf, lives nevertheleſs with an inviſible life, which the univerſal Spirit does continually infuſe in it, to advance in her Entrails the production of Minerals, in her Surface the Vegetables, and ſupply the neceſſity of Animals which ſeem to be Maſters of all the reſt; for we have already treated of this noble and ample Matrix in the Theorical part of this Treatiſe. Wherefore we dedicate this Section to Mineral Earths, which are endowed with ſome Phyſical Vertue, to the end to teach the Spagyrical way of the extracting of this Vertue, and ſeparating it by the Operations of Chymiſtry; and even if this Vertue cannot be ſeparated without alteration of its Subject, or its only eſſential Faculties, to preſerve and even encreaſe them by an addition of what may concur with the intention and anſwer to the indication of the Artiſt that intends the uſe of them. Theſe kinds of Earths have been declared by ſeveral names for three principal Reaſons; the firſt, for the place of their Original; the ſecond, for the Matrix which has ſupplyed them and given them their colour; the third, by reaſon of certain Characters or Figures impreſſed upon them. This is called the *Lemniac*, *Maltha* and *Turkiſh* Earth. This the Golden Mine or Solar Earth, the Silver Mine or Lunar Earth, the Venerean, Saturnine, &c. and finally, the *Terra Sigillata* or Sealed Earth, according to the place from whence it comes.

We ſhall not ſpeak here of the Mineral Earths or Mines of Metals, no more then of Marcaſſites, middle-Minerals, or Vitriolick and Sulphurated Earths; when we come to treat of Metals and their Original in the following Sections we ſhall be oblig'd to ſpeak thereof. Our Diſcourſe then here ſhall only be of Bolus's and Earths ſo properly called, that what we ſhall deliver, may be as a Light and Direction to handle all other ſorts of Earths that ſhall have ſome reſemblance and analogy with theſe.

Of Terra Sigillata, *or Sealed Earth.*

BEfore we ſpeak of the chuſing of theſe Earths, and deſign particularly the marks of their goodneſs and vertue, we muſt make a ſmall mental reflection upon the cauſe and reaſon of their chief Vertue. We have already ſo often ſaid, that Light is the ſpring and ſource of all good impreſſions, that we need not farther inſiſt thereon, being it is of abſolute neceſſity that this Light ſhould have tranſmitted her Rayes into the very Center of theſe Earths, ſince we find in them a Cardiack, Cephalick, Hepatick, Stomachial Vertue, which could not be unleſs this Earth were impregnated with ſome Vitriol, or Solar, Martial or Lunary Sulphur, which are neverthleſs only embryonated in the ſame, as we will make it appear in the ſequel of this Diſcourſe; For theſe Earths being only found in ſuch places, where perfect or imperfect Metals are extracted, ſo are they more or leſs pure, more or leſs efficacious and full of vertue, according as they partake of the purity or impurity of Vitriol and Sulphur, which are the Principles of Metals found in the place of their Birth and Original.

The moſt excellent of all theſe Earths, is that which is digged in the Iſland of *Lemnos*, by order of the *Grand Seignieur*, every year, and thence carried to *Conſtantinople*, to be diſtributed afterwards through *Europe* at his pleaſure: The ſecond in order and goodneſs, is that which is found about the Town *Striga* in *Sileſia*, where they have begun to give it a Seal, *viz.* two Sols: ſome call it the Fat of Gold, or *Axungia Solis*, becauſe impregnated with a Solar Sulphur, and it is of a reddiſh colour: There is alſo a ſecond or inferior kind, which is gray or whitiſh, called alſo the Fat of Silver, or *Axungia Lunæ*, becauſe impregnated with a Lunar Sulphur. That which is Solar, is dedicated to the Heart and the Diſeaſes thereof, as the Lunar to the Brain and Liver. The third kind of Earth in goodneſs is that of *Blois*, and all the ſorts of Earth that come nigh to it; the choice of either of them depends upon two chief notes: Firſt, It muſt be apt to ſtick and cleave eaſily to the Tongue when touched by it: Secondly, The wet or ſpittle that ſticks upon, or any other moiſt Liquor, muſt immediately riſe in ſmall puſtuls or bubbles, and make a kind of ebullition; or any parcel thrown in Water muſt immediately put it to a boyling. And as we ſaid that theſe Earths did partake of a Solar Vertue, by reaſon of embryonated Mineral Sulphur which is in them, ſo may we alſo affirm that they are Remedies purely natural, and capable to ſhew their vertue as they come from the hands of Nature, without neceſſitating Art to contribute any help of its own: contrariwiſe, it ſhould ſeem that Art here would but injure and offend Nature, ſince theſe Earths have much more vertue before the common preparation thereof pretended by vulgar Pharmacy, which are to waſh and triturate them upon a Marble or Porphyry; which in effect, doth nothing elſe but take away from them that vitriolick embryonated portion in which doth conſiſt their vertue and efficacy. But there is a Spagyrick preparation better able to draw their pureſt and moſt efficacious ſubſtance, and thus more pleaſantly and in a leſs Doſis it may be exhibited to Patients. The general and particular vertues of Earths and Bolus's, are to deſiccate and aſtringe, reſiſt putrefaction and venom, reſolve coagulated and congealed blood, ſtrengthen the Heart and Brain, and by Sweat purifie the maſs of Blood: wherefore with great ſucceſs and advantage they may be given in Plague, malignant Feavers, Diarrhea's, Dyſentery and bitings of Venomous Creatures. Their external uſe is to apply upon feſtered and deſperate Wounds, and to ſtop Hemorrhages or Iſſues of Blood.

The Diſtillation of Sealed or Sigilled Earth.

℞ ℔ v or vj of *Sileſian Earth*, bearing the mark of two Hillocks, with all the notes of goodneſs which we have aſſigned above: Break the Cakes in three or four pieces, and put them in a Glaſs Retort, which you muſt place in a cloſe Reverberatory, fitting to it a capacious Receiver luted exactly in the Joints; cover the Furnace, and give it a gradual fire during the ſpace of xx or xxx hours, or until no more clouds do appear, or that the Artiſt ſhall ſee a Sublimatory made, not onely about the neck of the Retort, but that it hath even penetrated into the Body of the Recipient; for it is then a ſure token that the Earth hath yeelded all the Salt and Sulphur which it did contain; and though it appears little by the bulk and quantity thereof, yet that which is extracted, ought to be highly valued by reaſon of its great vertue and pleaſantneſs; for the Liquor has a very agreeable acidity: That which is ſublimated, muſt be joined to the ſaid Liquor, put in a Glaſs Viol, and ſo kept for uſe. It hath no need of Rectification, for there is nothing in it but pure and uſeful. It may be uſed inſtead of the body of the Earth in all Diſeaſes whereto we have ſaid above that it did conduce; but this Liquor hath one quality beſides, that it is extraordinary good to appeaſe the pains of running Gouts, and to correct the malignity of Itch, and all other eruptions of the Skin. The Doſis is from iv to xv or xx drops, in Broth, Wine, or ſome other diſtilled Water appropriated to the Diſeaſe. But you muſt note, that the Earth left in the Retort, after diſtillation, cleaves no more to the Tongue, cauſes no more ebullition, when wetted with ſpittle or any other Liquor, though it keeps ſtill its ſhape and colour; which is an infallible token that its radical moiſture and internal fire, which were cauſes of their aſtringence and ebullition, are paſſed into the Recipient, and that this was by conſequence the chief parts of its vertue.

Of Bolus.

Bolus is a kind of reddiſh Earth, which partakes and is impregnated of the Vapours of ſome Mines or Veins of Iron, which is Mars, and participates ſomething of the Solar Nature. It is vulgarly called in Shops *Bole-Armeniack*, or Oriental and Fine, becauſe it comes from the Oriental parts of *Armenia*. The beſt is that which is pure, not mixt with Sand, which inſenſibly melts away as Lime after it has been wetted, or like Butter in the Mouth is very aſtringent, and eaſily and quickly ſticks to the Lips and Tongue. The chief Vertues of it are, ſtrongly to deſiccate and dry, to aſtringe and ſtrengthen; wherefore it is very uſeful in ſtopping of Fluxes, hindering Colliquations, and reſiſting Putrefaction and Venoms, which makes it to be employed in Diarrhea's, Lientery, Dyſentery, immoderate Courſes, whether white or red, ſpitting of Blood, bleeding of the Noſe, and ſtopping the blood in Wounds. It may alſo be mixt in Cataplaſms, Unguents, Salves and Aſtringent Pouders for outward applications. Bolus may be diſtilled in the ſame manner as the Sigilled Earth, and applyed to the ſame uſes. But becauſe Bolus of it ſelf is already an excellent Earth, we muſt teach our Artiſt how to improve and meliorate it, not by a ſeparation of its parts, but rather adding ſome Subſtances which ſhall encreaſe its vertue, according to the indication which may engage him to make uſe thereof; for as this Earth is dry and void of all moiſture, ſo doth it attract to it ſelf the Spirits and Salts of any Liquor mixt with much eagerneſs, and keeps them to its ſelf till the heat of the Patients Stomach calls them forth by making ſeparation thereof. We will deliver four ſeveral deſcriptions, that upon the model of it others may be prepared. The firſt ſhall be to make it more aſtringent, and capable of producing its effect ſooner and more ſafely in outward Applications. The ſecond, to render it more efficacious for diſſolving congealed and coagulated blood in the Body, whereby to corroborate Nature, and help it to expel and evacuate that Blood ſo diſſolved, either by Sweat or Urine. The third will encreaſe its aſtringency for inward applications, to make it ſooner ſtop the Fluxes and Looſeneſs of the Belly, Dyſentery and immoderate Courſes. The fourth will render it more fit to produce very remarkable effects in Peſtilential Diſeaſes, and all Malignant Feavers, where ſtrength doth fail by the ſharpneſs and abundance of the Venom, which of neceſſity muſt be brought to tranſpiration, and expelled from the center of the Patients Body, to the circumference and outward parts, by the help of this prepared Earth, which retains in it ſelf the beſt, ſubtileſt and pureſt of the Liquor wherewith it has been impregnated.

Preparation of the Bolus to make it more aſtringent for outward Applications.

THis Preparation cannot be made but once in a year, in the month of *March*, becauſe you can have no ſpawn of Frogs but in this Seaſon only, which is the beginning of the Spring. Take then about that time half a Bucket full of Spawn of Frogs, which put in a linnen Cloth Bag, ſomewhat thin; with half a hundred of Cray-fiſhes, bruiſed in a Stone or Marble Mortar until they be reduced to Pap; and having hung it over an Earthen Pan, or other Veſſel, receive the Liquor dropping from this Bag, and when you ſhall have about ℔ iv of this Liquor, purifie it by percolation, and mix with it purified and chryſtallized Salt-peter and Roch-Allum *ana* ℥ j ß. After which reduce ℔ j of fine Bolus to Pouder; and having moiſtned the ſame with this Liquor, dry it again, and thus proceed moiſtening and drying until the Bolus hath drunk up all the Liquor; and this Bolus thus prepared will be very good for outward Applications, both for ſtopping Blood, and hindering inflammation and other Accidents, which for the moſt part follow Bruiſes and Wounds. It may alſo be put in Plaiſters, Salves and Cataplaſms.

Preparation of Bolus to reſolve coagulated Blood inwardly.

℞ Smallage, Sorrel and Plantain newly gathered, of each ℔ j; beat them in a Marble Mortar, and expreſs the Juyce thereof, which you muſt put in a Cucurbit on Sand, with ℥ iv of mundified Roots of the ſame Plants, and Manip. ij. of our Ladies-Thiſtle or the Milky-Thiſtle, Manip. iij. of Chervil, and iv. of Pimpernel: Cover your Veſſel with a Blind-head, and make it boyl the ſpace of ſix hours, then percolate it as clean as you can; and with this Liquor imbibe ℔ j of fine Bolus in Pouder, and let it dry, continuing this moiſtening and drying until all the Liquor be ſpent; and keep it thus prepared to adminiſter to ſuch as being fallen from high, have ſome quantity of Blood inwardly ſhed in the Breaſt or lowermoſt Belly. The Doſis muſt be from x grains to ℈ iiij, mixt with as much Nutmeg-pouder in Broth, or ſome vulnerary Decoction, made with Bugle, Sanicle, Winter-green, and *Conſolida Sarracenica*; or even adminiſter it in Pills, and give the Patient to drink after.

Preparation of Bolus againſt Dyſentery and Diarrhea's.

℞ Biſtorta-Roots or Snakeweed, Sorrel, Cynogloſs or Dogs-tongue, *Lapathum Acutum*, Plantain, Tormentil, *ana* ℥ j ß; freſh and recent Herbs of Plaintain, Mille-folium, Pyrola or Winter-green, new gathered Leaves of the ends of Oak-Branches, *ana* Man. ij. Pick all theſe, waſh and ſhred, and boyl in an earthen Pot in Sand, with ℔ j of Phlegm of Vitriol, and ℔ iij of Water of Knot-graſs, till it be reduced to a third part; then ſtrain and percolate it cleanly; and with this Liquor ſprinkle and moiſten ℔ ß of Bolus; and continue moiſtening and deſiccating until the whole Decoction be ſpent. And thus ſhall you have a wonderful Bolus to ſtop Dyſentery, and all kind of Lasks of immoderate looſneſſes of the Belly, without any fear of ſhutting (as the Proverb ſayes) the Wolf in the Sheep-fold: For this Remedy performs its action by ſtrengthening, corrects meerly the irritation or weakneſs and relaxation of the Maw-gut, and reſtores the Ventricle in a condition and ſufficient ſtrength to retain and digeſt the Aliments and Meats injected. The Doſis is from v grains to ℈ ij, with half as much Salt of Coral made in Pills with vitriolated Conſerves of Roſes, or mingled with ſome ſtomachical Decoction, or in

Broth; but it is much better given in Bolus, that it may have ſo much more leaſure to tang in the Stomach, and impreſs better there the Character and Irradiation of its vertue.

Preparation of Bolus againſt Peſtilential and Contagious Diſeaſes.

℞ Scordium and Rhew, *ana* Man. ij, upper rind of Oranges and Lemmons, *ana* ℥ ij, Angelica, Carline-Thiſtle and Contrayerva Roots, *ana* ℥ j: ſhred ſmall the Plants and Rinds, and reduce to courſe Pouder the Roots; then put in a Matraſs with ℔ j ß of Spaniſh-Wine, and applying thereon a Blind-head, put it to digeſt in a vaporous Bath the ſpace of three natural dayes; which expired, let the Veſſels grow cold; then expreſs the Species, and filtrate the Liquor, with which imbibe ℔ ß of Oriental Bolus reduced to Pouder and divided in four equal parts: But becauſe it would be damage to loſe the Water, which by an ordinary way of exſiccation would vapour away in the Air, draw off the Water again in *B. M.* till the Maſs remains dry in a Cucurbite fitted with its Still-head, and that four times reiterated: Having ſo many times moiſtned your Bolus, which afterwards keep in Pouder in a Bottle well ſtopt. You muſt alſo preſerve curiouſly the Water; For as the Bolus hath preſerved the Centrical Vertue, and taken to himſelf the Extract of thoſe Ingredients which encreaſe its Cardiack and Alexiterial Vertue, ſo hath the Water drawn what was Spirituous and Volatile in the ſame, which is not of leſſer importance then the reſt. This *Antipeſtilential* Bolus may be given from v *gr.* to xxx, with half as much Vipers Fleſh in a ſpoonful or two of the Water drawn off from the Preparation in all Peſtilential and Malignant Diſeaſes, but chiefly againſt the Plague; and even this admirable Remedy may generally be uſed againſt all Poyſons.

Theſe are the four kinds of Preparations whereof we thought our ſelves engaged to ſpeak, that they may be as Models and Examples to perform others, according to thoſe Indications which Phyſitians, careful of the recovery of their Patients, ſhall take. The Chymical Artiſt may diſtil the Bolus, in the ſame manner as we have taught above: the Sigillated Earth was to be diſtilled and appropriated to the Extract thereof, according to the Vertues whereof the Bolus is poſſeſſed, obſerving the ſame Rules and Doſis as in the Remedies extracted from Sigillated Earth, as we have ſufficiently declared above.

SECTION II.

Of Stones.

BEfore we deliver the definition of Stones, and deſcribe the Operations performed upon ſome of them, we thought it not unfit to ſpeak ſomething of the Eſſence or Mineral Spirit which rules in the Earth, in whoſe boſom it begins and ends the generation both of Stones and all other Mineral Bodies. Now this Eſſence or Spirit is void of action, unleſs aſſiſted by the Water which is to it inſtead of a Vehicle, to convey and carry it in its ſoft and fluid Body into the very Bowels of the Earth. This Mineral Eſſence ſeems to be nothing elſe but the Univerſal Spirit of the Spirit of the World, impregnated by the light of all the Mineral Ideas, which it doth impreſs and communicate to the Water, that ſhe may be capable to produce the Fruits of the Mineral Kingdom in the ſeveral Matrixes of the Earth, according to the Genus and Species of this Eſſence, differing in nomination, though one and the ſame in eſſence: For according as it is Metalline, Petrifying, Saline, Bituminous and Earthly, it produces the variety of Subſtances depending of each of theſe Subalternate Genders, and according to the predominant Character and Idea, the Mineral Subſtances are pure or impure, fixt or volatile, and ſo of all the other Proprieties and Faculties of theſe Mixts.

This being ſo, it is not difficult to conceive that Stones in general are nothing elſe but Terreſtrial hard Bodies, not ductile, apt to crumble, and coagulated by the power and ſtrength of the Lapidifick Ferment. We have hinted above the difference and variety of Stones: There remains no more to do at preſent, but to chuſe thoſe we intend to give for an Example and Pattern of the Operations, which generally may be performed upon all others. We will then ſelect for the ſubjects of ſuch Preparations as may be wrought upon Stones; firſt, the *Emerald*; ſecondly, the *Chryſtal*; thirdly, the *Coral*; fourthly, *Lapis Judaicus*; fifthly *Chalk*; and finally, the *Limeſtone*. But as there are general Obſervations which may be given for all Stones in general, we muſt ſpeak ſomething thereof, becauſe it will much help our Artiſt to facilitate and explain the meaning of all what we ſhall hereafter ſay, not only of Stones, but alſo of all other Minerals and of Metals themſelves. They that will have a very exact knowledge of Stones,may have recourſe to that learned Book which *Boetius Van Bood*, Phyſitian to the Emperor *Rudolphus* II hath writ, and he ſhall be fully ſatisfied as touching this matter: for our intent is only to anatomize here thoſe we have named; becauſe they will be ſufficient to inſtruct the Chymical Apothecary how to work upon all others that have a relation or conformity to them.

Firſt then we ſay, That our Artiſt muſt conſider, that as the Body of precious or not precious Stones, is harder and more fixt then that of Animals and Vegetables; ſo muſt he go to work and proceed in another way in their Anatomy, and uſe different Menſtruums to extract and diſſolve them: And moreover, that theſe Menſtruums ſhall not act for the moſt part upon ſuch fixt and ſolid bodies as theſe are,unleſs they be calcined beforehand, either by themſelves, or mixed with Salt or Brimſtone, to penetrate the hardneſs and compactneſs of their Bodies, and render them porous, ſo as the Liquors which ſhall be uſed in their extraction or diſſolution,may more eaſily and uſefully perform their action upon them. *Calcination* is one of the principal Operations made upon Stone, either to make them fit for Medicinal Uſes, or to open them and render them capable of the moſt exact Chymical Operations. This diſpoſitive or preparatory Calcination is three-fold: for it is either meer Ignition, as when common Lime is burned; ſecondly, Ignition with an extinction of the matter in ſome Liquor, to diſunite it by this reiterated action, and ſo reduce it into Pouder or Calx; the third Calcination is performed with Common Salt, Salt-peter or Brimſtone. *Solution* follows Calcination, and is made with ſeveral different Menſtruums, according to the greater or leſs fixity found in the diſſoluble Bodies; the chief and moſt uſually employed, are Vinegar, either ſimply diſtilled, or alkalized, the Spirit of Therebinthinated Vinegar, and the Vinegar of Honey, Spirit of Vitriol and of Salt, and Oil of Sulphur or Brimſtone made *per Campanam*; but the Spirit of *Venus* goeth in vertue and activity beyond all the foreſaid Menſtruums, to extract or diſſolve all manner of calcined or uncalcined Stones. We will ſhew the preparation of it in the Section of Metals. After Diſſolution follows Coagulation, which is performed two wayes; either drawing of the Menſtruum by Evaporation or Diſtillation, and then what remains is a Salt; or elſe it is made by precipitation, and the remaining Pouder is properly called a *Magiſtery*.

There is beſides Edulcoration and Putrification made by Ablutions, Solutions and Coagulations often repeated : And for the laſt Operation, Liquation or Solution of the Salts, which have been extracted from the Stones, in a Liquor commonly called *Oleum per deliquium*, or Oil of Deficiency ; it is made in ſome moiſt place upon ſome Table or ſquare of Marble or Glaſs ; and the crown and perfection of all the work, is the volatization of the Liquor or Salt of a Stone by the help of ſome good Cordial Menſtruum, which is not to be performed but by digeſtion and reiterated diſtillation ; for in every one of theſe Operations, there aſcends ſtill a portion of Salt with the Menſtruum ; and if the Menſtruum be left impregnated with this Salt, it is called the *Elixir* of the Stone ; but if it be drawn off with a ſoft and gentle heat, that which remains in the bottom of the Veſſel in the form of an Oil, is called the Eſſence of the Stone.

Thus by this gradation of Operations, Stones are converted into Salts, Magiſtery, Liquor, Elixir and Eſſence : But before we put an end to theſe general hints, we will give a general proceſs upon all kind of Stones, to reduce them into Salt and Eſſence with leſs work and leſs toil, which is performed in the following manner.

Reduce to an impalpable Pouder ſuch kind of Stone as you ſhall think fit to take by one of the three Calcinations we have mentioned above, then grind this ſubtil Pouder on a Porphyry Stone or a Sea-ſhel, with equal weight of Bay or Sea-ſalt well dryed ; put that mixture in a Crucible, which you ſhall cover and lute exactly ; the Lute being dry, put it in a Potters-Furnace at the ſame time as he begins to bake his Pots, and there let it ſtand twenty four hours ; after which take out your Veſſel and open it, and the matter which you ſhall find in it, diſſolve with warm diſtilled Rain-Water in a glazed-earthen-Pan ; ſtir and triturate it nimbly with a Glaſs or Wooden Peſtle ; pour the diſſolution in another Pan alſo glazed, and thus proceed grinding, ſtirring and diſſolving in new warm Water, until the Calx of the Stone remains indiſſoluble in the bottom ; then dry it, and reiterate the ſame Operation with dryed Salt, until all the body of the Calx be reduced and converted into a ſlimy fat and glewing ſubſtance among the body of the warm Water : then being ſetled again, ſeparate the clear Water which ſwims above the ſlimy grounds of ſettlement by inclination ; and put all theſe Waters in a Glaſs-Cucurbit in Sand ; give it a competent fire, and draw off by evaporation or diſtillation the half part thereof : then pour upon the Liquor remaining in the Cucurbit, Oil of Tartar, drawn by deficiency or *per deliquium*, drop by drop until this Liquor becomes as white as Milk ; then filter this white Water, to ſeparate the part thereof which you ſhall find precipitated ;

and thus continue to precipitate and filtrate until the Water remains clear. Then put together all the ſlimy parts remaining in the bottom of the Pans, with that which is in the Filter, and waſh it with pure lukewarm Fountain-Water, until the Water comes out as void of taſte as when it was poured on, which will be a ſure token that the remaining matter is deſtitute of all ſaltiſhneſs; then ſeparate the Water thereof with as much exactneſs and care as you can; and put this matter in a Cucurbit, pouring upon it very good diſtilled Vinegar four fingers high; put all in Aſhes to digeſt, until the Vinegar hath loſt its ſharpneſs, and is become ſweet; then draw it off by inclination, and pour freſh Vinegar thereon at the ſame height, and thus proceed and go on, until the diſtilled Vinegar changes no more its taſte: then joyn all theſe extractions and diſſolutions, filtrate and evaporate in Sand ſlowly without boiling until all be dry, and you ſhall have the Salt of the Stone of a grayiſh colour, which grind and put in a Matraſs, and pour upon Tartarized Spirit of Wine the height of four fingers: ſtop your Veſſel with a Blind-head, and extract the Tincture thereof in *B. M.* and when the Spirit ſhall appear coloured, ſeparate it, and ſupply with new, until it takes no more colour; then filtrate all the Tinctures, and draw off ſoftly the Spirit in a vaporous Balneo, until the eſſence of the Stone remains in the bottom in the conſiſtency of a clear Syrup. This is the general method of working upon Stones of what vertue or quality ſoever; and whenſoever our Artiſt hath made any Eſſence of this kind, he ſhall repair to ſuch Authors as have particularly treated of that Stone and its vertues, and ſo ſhall be capable to apply them to their right uſe. We may only add the general Doſis of theſe noble Remedies, which is from j or ij drops, to viij or x, in the morning faſting, in Broth, Wine, Decoction, or ſome diſtilled Water ſpecifick and appropriated to the Diſeaſe and Remedy; and let this be ſaid in the way concerning Stones in general; we come now to the particular Operations which we propound for a Pattern and Model in particular.

Of the Emerald, and its Chymical Preparation.

THE Emerald is a precious Stone, tranſparent and very fair by reaſon of its pleaſant green colour, the ſofteſt and moſt brickle of all others. The beſt Emeralds are the Oriental, both in regard their green is deeper & more pleaſant to the eye, and becauſe they are of greater vertue; the meaneſt are thoſe which are brought from *Peru*, and found in *Europe*. After that the fragments of Emerald have been purely calcined by Ignition and Extinction, in Water of Juice of Bugloſs, and then triturated or ground to an Alkohol upon the Porphyry Stone with the ſame Water,and dryed; it may be adminiſtred in Bolus or Pill, with Conſerve of Marigold-flowers, from iv *gr.* to x, againſt all manner of Lasks of the Belly and bloody Fluxes; but chiefly againſt Dyſentery, either proceeding from eroſion of the Entrals, or from ſome malignant matter: It is alſo a fit Remedy againſt the biting of Venomous Creatures,Plague, Peſtilential Feavers,and all others that partake of malignancy. There are many other noble vertues attributed to the Emerald, being whole and unprepared: But they only reſpect outward Application, ſuch as to hang it on the neck againſt the Falling-ſickneſs; tie it to the Thigh for advancing delivery in Childbed; apply it on the Belly to prevent Miſcarrying; ſtop the bleeding of the Noſe with keeping it in the Mouth; as likewiſe Bloody-Flux, and Emrods applyed upon the Lungs: It is alſo ſaid to recreate both outward and inward ſenſes,worn on the Finger; and to expel fear and terror of ill Viſions. There are ſome Authors who deliver as an undoubted truth, it will oftentimes break, being worn by too laſcivious a Perſon, and who unboundedly will abandon himſelf to Venery. So much have we thought fit ſummarily to ſay, that it may appear what experience hath found out towards the efficacy of precious Stones, which have all in themſelves ſome portion of very pure Metallick Sulphur, which communicates Vertues and Faculties unto them of much more extent then that of Animals and Vegetaqles. And what is this Sulphur elſe, but the pureſt part of Condenſed Light, which yeelds a continual irradiation of its Vertue, without any leſſening or diminution, by reaſon of the Magnetical Vertue of the Stone, which perpetually attracts its like from the uppermoſt Heaven, as it appears yet better by the *Oriental Saphire*,and the efficacy is wonderful againſt the Plague, inſomuch as if the Patient hath many Boiles or Sores on his Body at once, none of them will break or run, but that about which a Circle or Ring hath been made with a Saphire touching the Skin: And moreover, the ſcarrification ſhall never ſurpaſs the bounds, which the vertue of the Stone ſeems to have preſcribed and limited unto it. But let us come to the Chymical Preparation, by which the Salt Tincture and Elixir or Eſſence are extracted.

Of

Of the Chymical Preparation of Emerald.

TAke fragments of Emerald, the greeneſt and cleaneſt you can meet with, beat them to Pouder in a Steel-Mortar, and ſearce the Pouder through a fine Linnen Searcer fitted in a Box, which in the *French* Shops is called *Cicotriner*; or it is as good to triturate them into an impalpable Pouder, which put in a Matraſs, pouring upon it of the Volatile Spirit of Urine, having yet its Phlegm, to draw the colour; and the Spirit being ſufficiently coloured, draw it off, and pour on other, until it takes no more colour; then filtrate the Tincture through a Cotten; put them in to a Cucurbit to draw off the Spirit, till you have the bottom in the conſiſtency of an extract, upon which pour very good Spirit of Wine; then ſtop the Veſſel with a Blind-head, lute it, and in the vapour of Balneo put it to extract, digeſt and circulate until the Spirit be ting'd with a high green; after this draw back again the half or two thirds of the Spirit with a ſlow heat, and you ſhall have an Elixir or eſſence of Emerald left, which is a ſoveraign Remedy againſt Dyſentery, and all other kinds of Flux of the Belly, red and white Courſes of Women, Emrods and Hemorrhagy. It is of no leſs uſe againſt all affections of the Brain, and paſſions of the Heart, chiefly againſt Swooning, Weakneſs and Palpitation; as alſo of Melancholly, Phrenſie, Hebetation or weakning of the Functions of the Spirits proceeding from ſome long and perrilous Diſeaſe. For beſides this Centrical and Luminous Sulphur, whence all theſe noble Vertues are derived, there remains beſides in this Elixir, a certain portion of the Volatile Salt of Urine, which cleaves to this Sulphur, by the help of the Spirit of Wine, framing together an eſſence capable of all theſe Vertues which we have attributed unto it. The Doſis is from ij drops unto x, in Liquor appropriated to the Diſeaſes of the Head, Heart, and lower Ventricle.

Of Chryſtal, and its Chymical Preparation.

CHRYSTAL is a tranſparent Stone, having ſome likeneſs unto congealed Water reduced into lucid and tranſparent Ice; ſo that what the *Greeks* call *Chryſtal*, we call it *Congealed*. We ſhall not here inſiſt long upon any debate to prove that Chryſtal is nothing elſe but meer congealed Water; ſince to diſcover the untruth of that Opinion, it will ſuffice to ſay, that Chryſtal doth not melt, but being calcined, turns into Calx and Salt, by the ſtrength of the Spirit, by which it hath been coagulated of a very pure Earth, and a little proportion of Water, which by help of the Salt it had in it ſelf, impregnated with the petrifying Idea and Ferment, hath diſſolved the ſaid Earth. Neither ſhall we ſpeak of that Hexagonal Figure which the outſide of the Chryſtal doth ever repreſent, but ſhall only ſay, that the Circular Figure is the perfecteſt of all others, and that Hexagonal comes the neareſt to it: and that as the Chryſtal is one of the moſt pure and perfect Subſtances, therefore alſo it comes nearer to the Spherical or Circular Figure. Chryſtal is found in *Portugal*, in the Iſland of *Cyprus*, *Germany*, *Hungary* and *Bohemia*: It is not difficult to our Artiſt to make his choice thereof, by reaſon of the tranſparency of the matter; it being ſufficient to chuſe that which is more compacted, pureſt and cleareſt; and to prepare it a little better then uſually, it muſt be made in a groſs Pouder, and heated to redneſs in a Crucible with a Wind-Furnace, and when it is glowing red, pour in Radiſh-Water, or Water of Roots of Reſtabovis, or Reſtharrow, ſomewhat ſharpned or acuated with a little Spirit of Salt; and this ignition and extinction continued three or four times, then grind it on a Porphyry to implacable Pouder, with the ſame Water that was uſed for the extinction of it; and thus being dryed, keep it for uſe. Chryſtal hath an Aſtringent Vertue, therefore it is good for ſtopping of a Lask, and againſt Dyſentery, againſt Cholick, *Cholera Morbus*, white and red Courſes of Women, Gonorrhea's, and *Ven.* runnings: It encreaſes Milk in the Breaſt, expells and diſſolves all tartarous preternatural ſubſtance in all parts of the Body: Above all, it diſſolves Tophus's and hardneſſes in Limbs proceeding from the Gout. But its principal uſe is to expel clammy humours and Sand from the Kidneys and Bladder. The Doſis is from ℈ j to ℈ ij in Bolus, in ſome conſerve of Eglantine, or Parſley-Water, if it be for Nephritical Paſſions, and ſo in other Conſerves or appropriated Waters, according to the prudence of the skilful and expert Phyſitian, and the Diſeaſes he takes in hand.

The Chymical Preparation of Chryſtal.

BEfore we come to the exact and perfect preparation of the Elixir and eſſence of Chryſtal, we muſt premiſe an inſtantaneous Operation, in reſpect of the other, whereby our Artiſt may ever be in readineſs to ſuccour and aſſiſt thoſe that ſhall have need of this Remedy, according to the

Order and Preſcription of Phyſitians: To this end, take equal parts of Parſley, Nettle, Radiſh-Water, as alſo of Reſtabovis or Reſtharrow, acuated with Spirit of Vitriol, or Oil of Sulphur *per Campanam*; put all theſe Waters in a well glazed Earthen-Pan, and having brought to ignition in a Wind-Furnace as many ounces of Chryſtal as there are pints of theſe Waters, let the Chryſtal be onely groſly beaten, and when it is glowing hot and red, extinguiſh it in the ſaid Waters, and ſo reiterate this ignition and extinction ten or twelve times, that ſo the Waters may draw to themſelves the beſt part of Salt of Chryſtal; then filtrate the Liquor remaining, and add two ounces of White-Sugar-Candy to Pouder to each pound; and thus ſhall you have a quick and eaſie remedy at hand, to adminiſter to thoſe that ſhall find themſelves perſecuted with the pains of Gravel. The Doſis is from half an ounce to three, in Broths or Decoction of Roots of Onions, or Reſtharrow, and *Virga Aurea*, or Golden Rod, made with equal parts of White-Wine and Water; and note, that the Patient muſt be in a half Bath, when he takes this Remedy, and be prepared with a Glyſter of Turpentine taken and given back before he enters into the Bath.

The Preparation of Salt of Chryſtal.

DRY the remainder of the foregoing Preparation, and grind it to a very ſubtile Pouder upon a Porphyry, then flux it in a Crucible, equal weight of very pure Salt-Peter; and when it ſhall wholly flow, throw in it by degrees and ſmall parcels, the Chryſtal Pouder well dryed, and leave them ſo together by infuſion five hours; this done, diſſolve that which remains in the Crucible with diſtilled Rain-Water, to waſh away the remaining Salt-Peter; then dry gently the Calp, and put it in a Matraſs, pouring upon it very good diſtilled Vinegar, three times cohobated upon burning Nettles; and continue this diſſolution, till the Vinegar draws no more; then filtrate all the diſſolutions, and evaporate until they be dry, and you ſhall find in the bottom of the Veſſel a greyiſh Salt, which you muſt diſſolve again in the ſame Menſtruum, filtrate and evaporate to purifie it; and thus you may keep it, either dry as a Salt, or diſſolve it in Liquor in a cold Cellar, and you ſhall have that which is improperly called *the Oil of Chryſtal*. The Doſis of the Salt is from iv *gr.* to xvj, in appropriated Liquors, and with requiſite precautions; and the Doſis of the Liquor is ſomewhat ſtronger, by reaſon of the moiſtneſs which the Salt hath attracted to it ſelf, by which it is reduced to Liquor. You muſt turn back to what we have ſaid of the Vertues of prepared Chryſtal, to judge of the Salt and Liquor: Noting this nevertheleſs, that they are principally and more properly uſed againſt Podagrical Diſeaſes, and ſpecifical for Kidney and Bladder.

How the Elixir or Eſſence of Chryſtal is to be prepared.

℞. of the pureſt Rock-Chryſtal, reduce it to a courſe Pouder, and place it in a Crucible in a Wind-Furnace, and being red hot, quench it in a glazed Pan full of very good diſtilled Vinegar, and reiterate this Ignition and Extinction three times, or which is better, till the Chryſtal turns off it ſelf into a Calp as ſmall as Sands; then dry this Calp, and mix it with equal weight of Flowers of Brimſtone, and calcine them together in a Crucible till all the Brimſtone be ſpent; this Calcination reiterate three times; then mix the remainder in the Crucible with its double weight of very fine Salt-Peter, which muſt be ſet in a fuſion and flux, and therefore the Crucible very good for the ſpace of xij hours: And if the Crucible ſhould happen to crack, have an eye preſently to ſupply it with another, which therefore you muſt have ready at hand, rebaked, and kept warm under the Grate of your Wind-Furnace, that it may out of hand be truſted to a great fire without danger of breaking; the time being expired, and the calcination over, grind the remaining matter on a Porphyr-Stone, ℥iv at a time, and add to it, by little and little, very good diſtilled Vinegar to the quantity of ℥ x. and thus continue till you have a pound of the grinded matter, which put in a new large Matraſs, and pour on it of new diſtilled Vinegar pure & ſtrong; ſtop the Veſſel with its Blind-head, luted with Quick-Lime, and beaten Whites of Eggs; then put to digeſt in *B. M.* the ſpace of two natural dayes with a moderate heat, and in the end you ſhall find the Vinegar tinged with a very high blood-red colour; open the Veſſels, and filtrate the Liquor, and put it in a Cucurbit in *B. M.* to draw all the Liquor till the grounds remains dry; which take afterwards, and put on a Marble Stone in a cold Cellar, or ſome other moiſt place to reſolve them into a red Liquor which you are to receive in a Glaſs Cup or Doſis, co-operating ſtill carefully, whither the drops as they fall be red, becauſe the eſſence of the Chryſtal is only in them which hold forth that colour; for when the colour alters, it is a manifeſt ſign that the fixed Salt of the Salt-Peter diſſolves it ſelf; wherefore you muſt keep apart the firſt Liquor, without much heeding the other: let this red Liquor ſettle during ſome dayes, and draw by inclination the pure part from the impure, which preſerve in a ſtrong Vial; and when you will uſe it, take ℥ j thereof, and mix it with another ounce of good White-Wine in a Vial, and ſhake it together; then let it ſettle the ſpace of twenty four hours, and there will be yet a new defecation; pour the clear and red thereof, not ſtirred, in three pound of White-Wine, to which this Liquor will cleave without leaving or ſeparating any impurity; this mixture muſt be adminiſtred three times a day to ſuch as are tormented with the Stone, Gravel, or Nephritical Fits, and thoſe alſo which have already ſome diſpoſition towards the Gout, and find any weakneſs or impediment in their Limbs: but chiefly to thoſe which are troubled with Tophus's and Hardneſſes, by reaſon of the Tartar coagulated towards the extremities. The Doſis is ℥ iv or v in a Glaſs; the firſt time in the morning faſting, the ſecond two or three hours after twelve, and the third about bed-time: The uſe of it muſt not be intermitted during the ſpace of a Philoſophical Month, which is forty dayes, to perfect the recovery; and if during this interval the Belly doth not perform its office, take no purging Medicine, but it will ſuffice if every other day the Patient takes a plain Glyſter of freſh Stale, or Urine without any addition to it; and the next day ℈ j of the Liquor of *Mercury* of *Sennertus* in Chicken or Veal-Broath, where you have boiled Parſley and Scorzonera-Roots. But if any by prevention onely will take ſome of eſſencified Wine, a Glaſs in the morning faſting will ſuffice for the ſpace of fifteen dayes, twice in the year, viz. viij dayes before the two Equinoxes of *March* and *September*, and viij dayes after: and in ſo doing you ſhall doubtleſs reap the fruit of your hopes.

Of Coral, and its Chymical Preparation.

WEE put Coral and its Preparation in the rank of Stones, as much by reaſon of the analogy of its ſtony ſubſtance, as becauſe the Operations which are made upon it, have a great reſemblance with thoſe performed upon Stones, both in reſpect of the manner of working, and the Menſtruums which Artiſts do uſe both to diſſolve and to extract it. The work we ſhall teach hear upon Coral, may be a Pattern for Pearls, all kind of Stones proceeding from Animals, and from Shells: for it would but prove tedious to repeat ſo often the ſame thing, ſince both the manner of working and Menſtruums are a like in the one and the other.

We ſhall not loſe time here in frivolous debates about the Opinion of Ancient and Modern Writers concerning the generation of Coral, to know whether it was Plant-like, of a ſoft or hard branch before extracted out of the Sea, becauſe all this makes little for our purpoſe, it will ſuffice if we can but in a gueſs ſay moſt probably what it is, delivering the differences, and teaching the choice thereof, and principally how it is beſt reduced into uſeful Remedies.

Coral is nothing elſe but a ſtrong Shrub found growing upon Stones in the bottom of the Sea. There are ſeveral differences of it by reaſon of the variety of colours, and the more or leſs compactedneſs and hardneſs of its ſubſtance; but waving all other kinds, we purpoſe only to treat here of Red Coral, which muſt be of a cloſe ſubſtance compacted, dry and hard, high in colour, pure and clean, ſuch having more vertue, and poſſeſſing in it, as in a compendium, all the efficacy and eſſential Faculties, which the other kinds may be endowed with. But here ſome body might move a queſtion, Why Red is preferrable to all the reſt? To which the anſwer is not difficult, ſince this redneſs is an external ſign of the intrinſecal vertue of the Mineral Sulphur, which is one of the principles of Coral, and from which are derived the chief vertues of it, being of a Solar Nature; which is the cauſe alſo that all Artiſts have at all times ſought with great ſtudy, care and diligence the way to extract the true Tincture of Coral, being one of the chief Remedies which Chymical Phyſick doth afford; for if any thinks to be capable of giving a reaſon for this redneſs by the firſt and ſecond qualities of Subſtances, certainly he will fall ſhort of his purpoſe, ſince we can aſſign no better reaſon then the Will of the Almighty Creator, who hath imparted to things ſuch colours as he hath been pleaſed with, and hath ſo wiſely implanted them in their Seminaries, that their internal *Archeus*, or natural and innate Architectonical Spirit can never ſwerve from them, nor forſake them, but by error or uncapacity and unfitneſs of the matter, the ordinary cauſes of Generation of Monſters, which very unjuſtly are attributed to an error and blemiſh of Nature.

The Chymical Preparation of Coral.

As Coral poſſeſſes many ſingular and noble Vertues, ſo have our Artiſts in all times ſought the poſſible wayes of opening its body, with great variety of Menſtruums, to extract from the center of this mixt the noble Remedies which Nature hath implanted in it. I can even ſay, that there is no natural product upon which ſo many, either Vegetable or Mineral Liquors have been tryed; and to prove the truth of this Aſſertion, I ſhall only here rehearſe ſome of the principal, which are all manner of diſtilled Vinegars, Juices of Barberries, Lemon, Quinces, Orange, Spirit of Dew and Honey, acid or ſharp Spirit of Turpentine, the Liquor or Birch-tree, the Spirits of *Guajacum*, Box, Juniper, tops of Alder and Service-tree; Spirits of Tartar, Salt, Vitriol, Sulphur or Brimſtone, the tempered Spirit of Wine acuated with thoſe Salts, the burning Spirit of Coral it ſelf, the Vinegar or acid Spirit of the ſame, and finally the Spirit and Phlegm of *Saturn*; but above all, the moſt active and efficacious is the Spirit of *Venus*, whereof we have already ſpoken ſomewhere elſe, and will give a deſcription in the Section of Metals.

I have not thought it out of purpoſe to intimate the variety of theſe Menſtruums, to make it appear more evidently how many Operations have been begun and finiſht upon Coral; and that when the Chymical Apothecary ſhall conſult any of the Authors that have treated of it, and finding ſo great a difference, ſhall doubt to which part he may beſt and more ſafely incline, he may have a guide herein, and be conducted through this Labyrinth by the thred of Experience, which we our ſelves have made thereof. Wherefore we will give examples how to extract in the beſt manner the Salt of Coral and falſe Magiſtery; then how to make the true, which ought to be diſſoluble; and in the third place we will give the method of extracting the Tincture thereof; and finally, how the true Syrup is to be made, and that he may have a true and full Idea of the Vertues of Coral, and affix it to one of theſe four Remedies, according to their Corporeity, Spirituality, and their Doſis. We have thought fit to prefix the general and particular Vertues, which both Ancient and Modern Writers have attributed to Coral, which are theſe: The general Vertues are to be aſtringent, cool and dry, ſtrengthen and corroborate the Heart, Ventricle, Liver, and purifie the maſs of the Blood, whence it is given againſt the Plague, Venoms and Malignant Feavers. It chears up the Internal Senſes, as alſo the External; ſtops all kind of Fluxes of the Belly, Womb, and Privy Parts. *Paracelſus* ſaith, That Coral of a high colour worn about the Body as a Preſervative, frees the Party from fear of Witchcraft, Incantation, Poyſon, Epilepſie, Melancholly, danger of evil Spirits, or touch of Thunder.

How to Prepare rightly the Salt of Coral.

TAke as much well choſen Red Coral as you will, dry, hard, and of a high coloured Red; beat it a Brazen Mortar, well cleanſed with its Peſtle, to a courſe Pouder, and thereof put ℥ iv in a Matraſs, and gently pour upon ſtrong and pure diſtilled Vinegar: I ſay gently and by degrees, becauſe if it were poured too much at a time, there would immediately ariſe a ſudden ebullition by the action of the Diſſolvent upon the diſſoluble Body, and ſo part of the diſſolution ſhould run danger to be caſt away; therefore muſt you act with prudence and patience until the violent action of the Spirit be allayed; then may you continue boldly your pouring of the Vinegar all at once to the height of four fingers: and having placed your Matraſs in Aſhes or Sand, ſtir it often until the Vinegar ſhows no more action, or is grown altogether inſipid, which is then a clear teſtimony that all its ſharpneſs is loſt by the action it has upon the ſubſtance of the Coral; after this draw by inclination this Spirit ſo impregnated of the Coralline Salt, and pour on freſh to continue your extraction: and thus digeſt, extract, and draw off until no more of the diſſoluble ſubſtance of the Coral be left; then filtrate all the diſſolutions, being cold, becauſe if you did it whilſt they be warm, the heat would make ſome ſmall Terreſtrial Corpuſcles to penetrate through the Filtre, which would hinder the purity and diſſolubility of the Salt; all theſe diſſolutions being filtrated, put them in a Cucurbit in Sand, and draw off the moiſtneſs with a moderate heat until a white Ring appears about the Veſſel: then ceaſe the fire, for this is a ſign that the Liquor is too much loaden; touch not the Veſſel till all be cold, becauſe it would hinder the chryſtallization of the Salt, which makes it more eaſie to diſſolve, and more pleaſant to ſight; the remaining Liquor ſeparate by inclination to continue the evaporation of it in a Diſh, till in the bottom appears a dry Salt, but it will never be ſo fine nor ſo good as the firſt. But it may be objected, that the evaporation of the Menſtruum could ſooner be performed in Diſhes, or an earthen Pan, then in a Cucurbit covered with its Still-head; which I grant, but deny that it could be ſo cleanly done; for it would be impoſſible for the Artiſt to hinder the duſt of the Coals, which muſt continually be ſtirred in a Laboratory from ſpoiling and defiling the Salt; and above all things, cleanlineſs in Chymical Operations is to be ſtudied. There is nevertheleſs another Chymical Philoſophical Reaſon which may oblige him to draw off the Menſtruum in a Blind-head covered with its Still, *viz.* That he may know by this way when the Spirit of Vinegar ſhall be altogether changed, and that which drops down, becomes altogether inſipid, and as void of Salt as Rain-Water; Moreover, this Water which he draws off is not uſeleſs, ſince it is much better then many other diſtilled Waters to make Juleps thereof in Burning Feavers: For in this Water remains hidden a Spirit imperceptible to the taſte, but very ſubtil and capable of doing much good to ſick perſons: Secondly, The Salt of Coral will be finer and purer, and likewiſe of more vertue, becauſe by this ſlow diſtillation it gets more ſubtilty and refinedneſs, which becomes more capable of producing its efficacy.

Here we muſt reſolve a difficulty of great importance; which is, that almoſt all the Authors which have treated of the Practice of Chymiſtry, do preſcribe, that after the Salt of Coral, and all others, have been prepared and drawn with diſtilled Vinegar, they ſhould be dulcorated by ſeveral Diſſolutions and Evaporations, leſt the ſharpneſs remaining in thoſe Salts be hurtful and of prejudice to the bodies of ſick Patients, wherein to ſpeak truth, they are much deceived, and are to be blamed: for that Salt which they pretend to take away, is abſolutely neceſſary; and I am bold to ſay, that even in caſe they could remove and waſh it off by this way which they propound, that, what ſhould remain, would abſolutely be uſeleſs, not to ſay hurtful. For as Vinegar is but a fixed Wine by the predominancy of a Tartarous acid Salt over the Sulphureous Volatile Spirit of the Wine, we muſt acknowledge that it is nothing elſe but a liquid Tartar, yet involved in many impurities: But the Vinegar being diſtilled, it turns to a liquid Tartar more refined and more ſubtiliated, which can have no more of danger in it then the *Cremor Tartari*, unleſs it were by reaſon of its Phlegm. Now after this Spirit has diſſolved the Coral, and that the Artiſt draws off this Phlegm, the ſubtil Tartar of the fixed Wine joyns and incorporates with the Coral, and frames that which is called *Salt of Coral*, whoſe onely vertue proceeds from the union of this Volatiliz'd Tartar joyned with a Coral, becauſe it is this Salt which conveys the Coral into the laſt digeſtions of the Body, and drives away the ſenſible and inſenſible tranſpiration, and by Urins, all the peccant humors and impurities againſt Nature, harbouring in the Maſs of the Blood. But for a clearer proof, we will ſet this truth before your eyes in the immediately following Preparation.

How

How to make the falſe Magiſtery of Coral.

YOU muſt diſſolve the Coral in diſtilled Vinegar, in the ſame manner as we have preſcribed for the extraction of the Salt, and filtrate the diſſolution, out of which draw back again the two third parts of the Menſtruum by diſtillation, and the Veſſels being cooled, ſet the remaining Liquor in a Glaſs or white Earthen Diſh, and pour upon, drop by drop, diſſolved Salt of Tartar, which improperly is called *Oleum ☿ per deliquium*, and you ſhall find a white coagulation, which is nothing elſe but the earthly and ſtony ſubſtance of the Coral returned to a Body, which leaves and forſakes its diſſolvent, which is this ſharp Salt of Vinegar. Now all the lixivial Salts which are made by Calcination, do kill the ſharp ones, which cauſes the diſſolvent to quit the Body which it had diſſolved, and ſo it is reſtored to its ſelf again and precipitated, wanting that ſubtil Salt which did render it viſible in the Liquor; after this pour what ſwims above this white ſubſtance, and put clear Water upon to edulcorate it, and ſo continue doing till the Water comes off as taſteleſs and inſipid as when it was poured on; then dry gently this white ſubſtance, and you ſhall have that which is pretended to be the Magiſtery of Coral, which is (to ſay the truth) nothing elſe but a fixed and aſtringent earth, much worſe, and leſs ſafe then plain Coral prepared, or purely reduced to a very ſubtil Pouder. For they that ſhall ſay to commend this Magiſtery, that it conduces to Lasks of the Belly, and ſtrengthens the weak and debilitated ſtomack, and conſequently ought not to be preſcribed out of the Rank and Commerce of uſeful Remedies, muſt know, that the efficient cauſe of Lasks or Fluxes and looſneſſes of the Belly, and debility of Stomach, is for the moſt part nothing elſe but a harſh ſeroſity, ſharp and full of malignity, which cauſes an ill colliquation not onely of nutriment, but alſo of the very ſubſtance of the parts; and the Pouder of Coral ſhall be capable ſooner to remedy that, then the pretended Magiſtery, becauſe this acid againſt Nature ſhall act upon and deſtroy it, as by experience it is ſeen, that Coral ſweetens Vinegar, and that ſo the cauſe being removed, the effect muſt ceaſe. But it will be much better to make uſe of the Salt of Coral, whereſoever there ſhall be occaſion of uſing a Remedy; becauſe that, beſides it ſhall correct this malignant acidity, it will expel and evacuate by Sweats and Urines thoſe ſubſtances which have been altered and colliquated, and conſequently that effect which is intended by the Phyſitian ſhall never fail to come to paſs. But this pretended Magiſtery can never be well uſed in ſuch a caſe, becauſe it is fixt, and the diſtilled Vinegar, or even corroſive Spirits can have no action upon it: by which it appears that it is unſufficient and uncapable to deſtroy or alter that ſharpneſs againſt Nature, by which the looſneſs of the Belly, and relaxation or weakneſs of Stomach is wrought, and therefore it is altogether unprofitable in the uſe of Phyſick. But it will perhaps ue urged again, that it may alſo be precipitated without Spirit of Vitriol with its own Oil, or Oil of Sulphur, or Spirit of Salt, and that it will thus be mended and exalted, which we deny again; for, were there any good to be expected from theſe Magiſteries, it would be from that which is precipitated with Liquor of *Mercury*, rather then with theſe Spirits, becauſe it would yet be more fixed then the other, and ſo conſequently leſs capable of action. But we need not ſpeak any more of this, ſince *Paracelſus* in his ſixth Book of his ***Archidoxa's*** ſaith, That a true Magiſtery muſt almoſt in an inſtant penetrate our whole body by the quickneſs and ſubtility of its parts: by which it may manifeſtly appear to be ſomething elſe then theſe fixed Earths, uncapable of all action, much leſs of penetration, being deſtitute of all manner of Salt and Spirit, from the activity whereof all actions and powers are depending. And this ſhall ſuffice upon this Subject. Let us come to the true manner of preparing a Magiſtery anſwerable to its name, that is to ſay, a Magiſterial and principal Remedy.

How to prepare the true Magiſtery of Coral.

WEE ſhall not uſe in this Operation a ſimple diſtilled Vinegar, neither the body of any Salt, to open and penetrate the body of the Coral, without imbezling its power and ſeminal Faculties: Contrariwiſe, we ſhall preſerve them, and rather encreaſe by the help of a Volatile Spirit, penetrating, active, and not working as Corroſives, which cauſe indeed a diſſolution of ſubſtances, but alter and deſtroy the vertues thereof; it is that wonderful Spirit of *Venus* we make uſe of to prepare a true penetrative and diſſoluble Magiſtery; for this true Philoſophical Vinegar, ſhall reduce the Coral, as it were, to its firſt Being, or to a Spermatick Juyce, without altering nevertheleſs the goodneſs of its principiant Sulphur, becauſe this noble Diſſolvent is drawn off again with the ſame taſte, vertue and diſſolutive Faculty which it had before its action upon Coral, and may be afterwards yet employed for the like Operation, or any other whatſoever, which is none of the leaſt Myſteries of Art and Nature; for the diſcovery of which we are beholding to that wonderful *German* Phyſitian *Zwelferus*, who together with the invention of this ſecret, hath imparted us the manner how to uſe it.

To attain then to the Art of making a perfect Magiſtery; Chuſe ℥ iv of the beſt Red Coral you can meet with, and reduce it to Pouder, which being put in a large and capacious Matraſs, pour upon ſoftly and by degrees, for fear of violent ebullitions, ℥ xx of well rectified Spirit of *Venus*; and all its action being ceaſed and allayed, put the Matraſs to digeſt in a vaporous Bath the ſpace of a natural Day; which being over, filtrate all the Liquor, and you ſhall find all the Coral to be diſſolved, and that the reſidency remaining in the Filter is nothing elſe but a fat and muddy Earth, which contains the impurities and feces of Coral; put the Filtration in a Cucurbit in *B. M.* cover it with its Head, and draw off again your Spirit with ſo proportionate a heat, that the drops may but follow one another: and thus continue till the matter remains in the bottom of the Veſſel half dry; then ceaſe the fire, and put up the Spirit in a Vial, for it is as good as before. After this, waſh what is remaining in the Filter with ℥ viij of Spaniſh-Scorzonera-Water, mixt with as much of ſecond Cinnamon-Water; for ſome part of the Magiſtery yet remaing behind will diſſolve in theſe Waters; filtrate them, and diſſolve the ſubſtance remaining in the Cucurbit: and if this proportion of Water ſhould not ſuffice, take ℔ ß more to perfect the Solution, which filtrate very cleanly, and put all the filtrations in a Cucurbit; then cover it and place in *B. M.* drawing off all the Waters to a dry bottom, So ſhall you have a Cephalick and Cordial Water, excellent againſt Epilepſies and Convulſions both of young and old; and in the bottom of your Veſſel ſhall you have a true Magiſtery, melting preſently and ſuddenly in the Mouth, and in all manner of Liquors, endowed with almoſt innumerable Vertues. The Doſis muſt be from v *gr.* to xx, in Broths, Wine, or the very Water extracted from it. It is one of the moſt ſoveraign of Cordials, and a Specifick againſt Melancholy and Madneſs; It is likewiſe an excellent Remedy againſt Scurvy, for it cleanſes all the maſs of the Blood by all the ſeveral natural emunctories, and almoſt inſenſibly; finally, it is a true Preſervative againſt Malignant Diſeaſes, becauſe it ſtrengthens ſo wonderfully the Ventricle, that it hinders totally their ſeminary; and as the Venerean Pox hath its only original from, and its ſeat in the corruption of the Blood, which by progreſs of time infects all the other parts, by reaſon of the venenoſity which ſeroſities convey with that Univerſal Aliment; ſo there is nothing that will better either ſtop or hinder it, then this noble and admirable Magiſtery, becauſe it corrects or evacuates ſenſibly or inſenſibly whatſoever does foment or entertain corruption in the maſs of the Blood.

Of the Tincture of Coral.

THere is nothing ſo common in the Mouths and Writings of Chymical Artiſts as Tincture of Coral; and ſcarce any that hath medled with the Art, but pretends to have the ſureſt proceſs and way of making it, and moreover to have wrought Miracles therewith; but there is a vaſt difference between words and deeds; for it is eaſie to ſpeak boaſtingly, but hard to prove this truth by reality. Now as all Authors, but chiefly *Paracelſus*, do attribute to this Remedy extraordinary Vertues, ſo is it very fitting to be prepared againſt the deluſions and ſurpriſal of thoſe who pretend to the Art of making of it, and who keep it as a particular knowledge, and ſelect to themſelves, being not willing to impart ſo much as the manner of their preparation and extraction, much leſs the matter out of which they take their Menſtruum, whereof they make uſe in the drawing of this Tincture. The truth is, it is not without grounds we may ſuſpect their capacity; for they that boaſt themſelves with the knowledge of making this Tincture, are oftentimes altogether ignorant what Tincture is, or what Menſtruum. Let then all thoſe that will attain to the truth of it know, that the greateſt part of theſe pretended Tinctures, are nothing elſe but diſſolutions of the body of Coral, if it be whole and without previous Calcination; or the only exaltation and rubification of the Menſtruum employed about the Coral calcined by a ſimple Reverberation, or with addition of ſome Salts; for calcinated and reverberated Salts, communicate themſelves to the Liquors uſed for Extraction, and ſo do exalt and colour with red the volatile Salt of the Menſtruum, by which the moſt part of thoſe which hitherto have believed to have made the true Tincture of Coral, are deceived; But the truth is eaſily diſcovered by precipitating or evaporating of the ſame; for by theſe two actions the Salt or body of the Coral is diſcovered, which was before inviſibly diſperſed through the Menſtruum. Now the Tincture of Coral muſt be free from all theſe miſtakes; it muſt be pure, it muſt be ſimple, not loaded with any other ſubſtance or body, becauſe the internal Sulphur of things have a great irradiation and large extent in their vertue, but ſcarce are comprehenſible and brought under the ſenſes by their corporeity. Moreover, the firſt or ſecond Menſtruums which are employed, muſt not be capable of themſelves to contract any colour, though long kept in digeſtion without addition of any other mixture. Our Artiſt being ſure and well reſolved in all theſe particulars, if with theſe precautions he draws any Tincture from Coral, he may be very confident it is true, and that it ſhall produce thoſe effects which Authors do attribute unto it. I can give no better nor more Philoſophical deſcription thereof then that which follows.

True proceſs of the Tincture of Coral.

TO arrive to the perfection of ſo noble a Medicine, time and matter muſt not be ſpared, and moreover it muſt not be undertook by a Novice in Chymiſtry, nor thought to be performed by him at the firſt brunt; for he muſt be capable of Diſtilling, Digeſting, Cohobating; Rectifying, Extracting, and all with Judgment and Proportion. Wherefore we will begin by the Preparation of neceſſary Menſtruums for the firſt and ſecond Extraction, and the Chymical Artiſt muſt well conſider theſe two Menſtruums, for they are not without a Myſtery.

The firſt Menſtruum.

℞ ℔ iv of Tartar of *Montpellier* well cleanſed and purified, as we have intimated in the preparation of Tartar; reduce it to a ſubtil Pouder, and mix exactly with ℔ j of Green Vitriol of Martial Nature: put this mixture in a large and capacious Matraſs, and pour upon ℔ iij of Phlegm of Vitriol impregnated with its volatile ſulphurous Spirit; this done, ſtop the Veſſel with its Blind-head exactly fitted and luted, and put it in digeſtion in cut or ſhred Straw, in a vaporous Bath to a moderate heat, during the ſpace of ſeven dayes; that being ended, have a Cucurbit well luted up to the middle with a good Lute capable of reſiſting the fire, and well dryed, which accommodate in a Reverberatory Furnace, leaving four Regiſters in the corners of the Furnace for the regulating of the fire; pour in this Cucurbit what hath been digeſted, and immediately cover it with its Limbeck-head or Still, luted as is convenient, and fit to it a Recipient, with the Joynts alſo luted; then give it a gradual fire, gentle and moderate, until the drops begin to follow, then entertain the fire in that degree until the Still drops no more, at which ſign encreaſe the fire by degrees until all the Vapours be over, and the Still-head begins of it ſelf to grow clear, then ceaſe the fire and let all cool. Separate from the diſtilled Liquor the Oil of Tartar by filtration, and rectifie the Spirit on Aſhes to a dry bottom, and ſo ſhall you have the firſt Menſtruum to extract Corals without any previous Calcination. But before we proceed further, we muſt give to our Artiſt warning not to loſe the matter remaining in the bottom of the Cucurbit after the firſt diſtillation: Contrariwiſe he muſt diſſolve it in diſtilled Rain-Water, he muſt filtrate and evaporate it ſlowly to a dry bottom, and he ſhall have a vitriolate Tartar not to be deſpiſed: for it is a great opener and diſopilative for all the Obſtructions of the Ventricle. The Doſis from iv *gr.* to ℈ ß, in Broths, White-Wine, or ſome decoction of *Scolopendra* or Spleenwort, and Chichory or Parſley-Roots.

The ſecond Menſtruum.

THis Menſtruum is ordinarily called *Aqua Temperata*, Temperate Water, as alſo the ſweet or dulcified Spirit of Salt: for it is made of equal parts of very pure Alkoholiz'd Spirit of Wine, and Spirit of Salt very well dephlegmated, which you muſt mix together by degrees; then diſtil and bring over the Helm in Aſhes four or five times, or what is yet better, until they be inſeparably conjoin'd and united together by reiterated diſtillation: this being performed, you ſhall have a very good preſervative and curative of the Plague and all contagious Diſeaſes, becauſe it hinders all manner of corruption, preſerves the natural parts in their equal temper and neceſſary vigour: This alſo is the Menſtruum which ſhall be uſed to keep in it ſelf the internal Sulphur of Coral, which the firſt Menſtruum did yet hide, or the ſhadow of the Body.

To make the Tincture of Coral thus.

℞ As much of the faireſt and redeſt Coral you can meet with, and reduce it cleanly to a very ſubtil Pouder; which put in a Matraſs, and pour upon the firſt Menſtruum about ℥ j or ij at once, ſtirring it nimbly; then begin to pour freſh Menſtruum, and ſtir until your matter be covered with it the height of four inches: ſtop your Veſſel with a Blind-head, and put to digeſt in a vaporous Bath in ſhred Straw, during the ſpace of three weeks, with a heat a little more then luke-warm; after thus open the Veſſels, draw off the red Tincture by inclination, and keep it in a Vial; then reaffund new Menſtruum upon the remaining body of the Coral, and continue the digeſtion and extraction, until the Menſtruum takes no more of the colour; then joyn all the Tinctures, and filtrate them; and having put them in a Cucurbit on Sand, draw off the Liquor to a dry bottom in a moderate heat, and you ſhall find in the bottom of the Glaſs a red Pouder, which hides in its center the internal Sulphur of the Coral, which conſtitutes its colour and vertue: put this Pouder in a circulatory Veſſel called a *Pelican*, and pour upon it of the ſecond Menſtruum called *temperate Water*, the height of vj fingers; lute exactly the upper Orifice of the Veſſel; after you have ſtopt it with a Glaſs-ſtopple, place it in Balneo, and keep in digeſtion during the ſpace of one Philoſophical Month, and this ſweet and pleaſant Menſtruum will draw to its ſelf this wonderful Sulphur, and take a very pleaſant colour. This done, ceaſe the fire, open the Veſſel, and filtrate the Tincture, to ſeparate the feculency and ſediment which remains in the bottom of the Pelican; put then the filtration in a Cucurbit, and draw off the two thirds or half of the Menſtruum, and keep choicely the remainder, as one of the principal Remedies ef a Spagyrical Shop. Let not our Artiſt preſume to cut off any part, or ſhorten the ſpace of forty dayes, though he perceives his Menſtruum to be tincted; for the circulation muſt perform the extraction, exaltation and union, which Operations do require no leſs time; for the Chymical Apothecary,which deſires to be ſucceſsful in his work, ought to follow the motion of Nature, which works nothing but ſlowly, and muſt ever have in his remembrance the ſaying of our great Maſter *Paracelſus*, that *omnis præcipitatio a Diabolo*; and that he that doth well, hath ever done ſoon enough.

But before we preſcribe the Doſis and Vertues of this Tincture, we muſt ſatisfie mens minds, that it is not onely good in Opinion and fancy, but in reality. To this end let us make a judicious reflection both upon the matter and the Menſtruums. There is no body but knows and confeſſes that Coral hath many ſingular noble vertues, ſo that both Ancient and Modern Authors have all unanimouſly acknowledged, that this vertue reſided in its redneſs, and have all ſtroven to find out ſome Liquor analogous to our Nature wherewith to extract it. This is plain in our proceſs; for the Ingredients we employ for the diſtillation of the firſt Menſtruum, are good and harmleſs each of them aſunder; but beſides there is a Myſtical and Philoſophical union made of them by the diſtillation and digeſtion that hath been previous,ſo that the ſharpneſs of the Vitriol hath been moderated and ſweetned by the Tartar, and by their action and reaction each upon the other, and thus of this match doth reſult a Spirit friendly to Nature, and free from corroſiveneſs, which may take away all fear that it might have altered the ſeminal principles of Coral: Contrariwiſe,it only has freed them from the commerce of the matter whereby they were fettered,and rather exalted them to a perfection,then debaſed their worth. As for the ſecond Menſtruum, I believe there is no body will take upon him to ſay ought againſt it, ſince the Spirit of Wine, and that of Salt, are two real Conſervative Balſoms, not onely of living Bodies, but even of dead Ones, while they are yet aſunder: But who ſhall not admire the wonderful ſecrets of Art and Nature, capable to make an union of the ſubtileſt and moſt volatile of all Spirits, with one of the moſt fixt, and therefore make a neutral and middle compound, which hath nothing left either of the taſte, or any other quality of the two taken aſunder! ſo that I conclude that this Tincture cannot be but one of the moſt excellent Remedies which Chymiſtry can afford, and therefore hath it this prerogative, to be one of the firſt and principal of all Remedies to purifie the maſs of the Blood from all the impurities by which it may be tainted: either Leproſie,Venerean Pox,or Scorbute; it ſtrengthens the Heart, chears the Senſes, drives away Melancholy, hinders ſad Dreams, ſtops Hemorrhages, allayes inward Pains, ſtrengthens the Stomach,appeaſes the irritation of the Mother,corrects corroding Vapours of the Spleen, removes Obſtructions of the Liver, Meſentery and Pancreas, or Sweet-bread, provokes and ſtops monthly Courſes, purges and cleanſes the Kidneys and Bladder, and ſtrengthens the Brain and all the functions of the Body and Mind: briefly,I ſhould never have done to rehearſe here all what Antient and Modern Writers have ſaid in praiſe of this Tincture; and to ſpeak ingenuouſly, nothing but great matters can be expected from all the Remedies which are made by Volatile Spirits animated with the ſtrength and vertue of internal Sulphurs of things, and chiefly thoſe that are of a Solar Nature, becauſe theſe noble Medicines do in an inſtant, as the light, penetrate into our laſt digeſtions, and as they go, imprint in all the parts the Stamp and Character, and the Idea of their Balſamick Vertue, which cauſes them to remove and drive away all the impurities which the vice of digeſtions had left in them. This Tincture may be uſed by the way of a Preſervative,morning and evening,in old Wine, or Hydromel, or Meade old and well digeſted in Broth, or ſome proper Water, to the end which is intended. The Doſis is from j drop to iv; and for the cure of Diſeaſes, it muſt be given to the ſick in ordinary, or

Chronical Diſeaſes, from j drop to x, in Menſtruum analogical and proportionate to the Diſeaſe, and that during the ſpace of forty dayes, becauſe that interval is ſufficient to renew and repare the whole Body in the moſt obſtinate Diſeaſes, and ſo proportionally under that time according to the exigency of the Diſtemper and Malady; therefore we muſt leave it to the judgment of the Phyſitian. But becauſe all are not capable of preparing this noble Remedy, and knowing the Genius of our Nation to be too impatient to allow themſelves the requiſite time whereby they may poſleſs the Tinctures and Arcana's; I have thought it fitting to joyn and teach here the manner of preparing a Syrnp of Coral, by a quick and eaſie way, and which may be made uſe of inſtead of this Tincture, but with much difference of vertue; and I know not whether Apothecaries will take the pains, and be at the neceſſary charge of the confection of this Syrup, though to ſpeak truth, it may prove the beſt piece of their Furniture; yet I have ſome hopes that thoſe that are careful, and do intend the good and advantage of their Neighbour, and diſcharge honeſtly the truſt of their Employment, ſhall furniſh themſelves with the one and the other of theſe two Remedies.

To prepare the true Syrup of Coral.

THis Syrup is commonly uſed to ſtrengthen the vital and animal Faculties, and as it is its chief ſcope, ſo will we give a deſcription thereof, which will in its contents follow the intention of the Phyſitian; neverthelеſs ſome Liquor may be ſubſtituted, when the Phyſitian intends to ſpecifie and render it more particular to ſome proper uſe, as Cinnamon in Water, Juice of Pomegranate and Quinces, Juice of Meliſſa or Balm, and Cochlearia or Scurvy-graſs, and ſo of many others according to the Indication which ſhall be taken by the Artiſt; this nevertheleſs may be uſed in the room of all the others, becauſe as it generally doth ſtrengthen Nature and its Functions, ſo is it capable to correct all the particular vices thereof.

To this end take ſome of the uppermoſt rind of Lemmon and Orange, *ana* ℥ iij, ſhred them very ſmall, and put in a Cucurbit; pour upon it ℔ j ß of very good Spaniſh Wine, or ſome other generous Wine; put in the Noſe of the Still a knot of ℈ ij of Grains of Kermes wrapt in Silk-Tiffany, with ℈ j of the beſt Saffron, ℈ ß of the beſt Ambergreeſe in Pouder, exactly mixt with the other two bodies; cover your Cucurbit with a Still-head, and having luted exactly the joynts thereof, as alſo the Recipient, which you ſhall fit thereunto, place it in Sand, and give fire by degrees and very ſlowly, until you have extracted about xij or xv ℥ of Spirit. Then take ℥ ij of diſſoluble Magiſtery of Coral, and diſſolve it it ℥ x of this diſtilled Spirit, adding ℔ j of very fine Sugar, reduced to an impalpable Pouder; ſtir all together, and place it in a circulatory Veſſel well luted to the ſlow heat of a vaporous Bath, as long as there ſhall be need to perfect the diſſolution: Then let the Veſſel cool, and put the Syrup in a well ſtopt Vial, and you ſhall have a Sovereign Remedy againſt all weakneſſes of Stomach, all Diſeaſes of the Spleen, and above all a great chearer of the Heart and Brain. To know the noble uſes of this Syrup, and wherein it may be imployed with ſucceſs, you muſt recal to mind what we have ſaid concerning the Vertues attributed to Coral, and its Salt, true Magiſtery and Tincture. The Doſis ſhall be from ℈ j to ℥ j, either alone or in ſome convenient Liquor. We ſhall deliver here no other Example for working upon Pearls, then this we have done upon Coral; for an Artiſt, be he never ſo little skilful, cannot but know the difference which muſt be made in working upon that precious and coſtly matter; and if he needs ſome other Preparation, let him conſult with thoſe who have written about it more punctually.

Of the Lapis Judaicus, *and its Chymical Preparation.*

THE *Lapis Judaicus*, is of the form, ſhape and bigneſs of an Olive, ſoft and eaſie to crumble, it is ſtreakt with lines or rayes equally diſtant one from the other, as if they had been framed with a turn; it is of a white Aſh-colour; it is called *Lapis Judaicus*, becauſe found in *Judea*; there is ſome alſo found in *Sileſia* in *Germany*. Some will make it diſtinguiſhable into Male and Female, and appoint the Female to be us'd for the Bladder, the Male for the Kidnies; all that is nothing but a meer Chimera: wherefore we will loſe no time on this ſpeculation, but beſtow it better upon ſome uſeful matter, *viz.* the preparation thereof will be a Pattern and Model for preparing alſo the Linx-ſtone and Spunges. Take then as much of *Lapis Judaicus* as you pleaſe, and reduce it to a groſs Pouder, and mix with equal weight of beaten Sulphur or Brimſtone, then put all in an earthen Pot, not glazed, or in a Crucible, and calcine it by degrees with a circular fire, until the Brimſtone takes fire & be fully conſumed; then put the calcined matter in a Matraſs, and pour upon Spirit of Vinegar of Honey four inches high, then put it to diſſolve and digeſt in Aſhes, ſlacking often the Veſſel; and when the Menſtruum ſhall be well coloured, draw it out by inclination, and pour freſh upon it; reiterating this proceſs three times, that the Salt contained in the matter may be all extracted; then filtrate the diſſolutions, putting them in a Cucurbit, and evaporate ſlowly in Sand to a dry bottom: and thus ſhall you have the Salt of the *Lapis Judaicus*, which afterwards you muſt purifie by ſeveral reiterated Diſſolutions, Filtrations, Evaporations and Coagulations, until it be pure and clean: But note, that if you evacuate the Menſtruum, with whom you make your purification, with a little of the Spirit of Salt, your work will proceed more ſpeedily, and the Salt ſhall be more efficacious and of a better taſte; this Salt may be kept for twenty uſes either dry or diſſolved, and this Diſſolution is properly that which they call *the Oil of Lapis Judaicus*, in caſe it be given dry in Broths, in White-Wine, or ſome Water or diuretical Decoctions. The Doſis muſt be from iv *gr.* to xij; & if the liquor be given diſſolved in the ſame Menſtruums in a double proportion, by reaſon of the moiſtneſs drawn from the Salt, (which encreaſes the weight): the vertue of the Salt and Liquor is to remove all difficulties of Urin, proceeding of Obſtructions cauſed by tartarous, ſlimy, muſcilagineous, ſandy and ſtony matters which are found in the Kidneys, Ureteries or Bladder. Theſe Remedies alſo drive away the Gravel and ſmall Stones from all other places where they uſe to grow for the moſt part.

Of Talk, *and its Chymical Preparation.*

THere are many who ſet no difference between the ſpecular or ſhining Stone which the Ancients did call *Selenite*, or *Lunary* and *Talk*, but they miſtake very much; for it is a Stone differing from the other by its inclination to friability, its green colour and fixedneſs. There are two kinds of Talk, *viz.* the white, and the coloured; the white differs again in its kind; for there is a *Venetian* Talk, which is greeniſh and breaks in thin Scales, being eſteemed the beſt and pureſt. There is alſo the *Moſcovian*, not ſo much valued as that which comes from *Venice*, but it has not a deſpicable quality, though it ſeems ſomething leſs pure. The ſecond kind of Talk is coloured, and is red and black, whereof *Paracelſus* makes mention in his Chronicles of *Carinthia*. Chymical Authors uſe ſometimes in an ænigmatical Language to call Talk *the Star of the Earth*.

We ſhall give an Example of ſuch Operations as may be made upon a coloured and uncoloured Talk, that we may not be reproached, the neglect and paſſing by of a Stone, the preparation whereof hath tormented ſo much, and ſo violently torments yet every day, the Brain of thoſe which labour in the extraction of its Oil, which hath ever been the Idol of the moſt famous *Courteſans*, for the help they pretend to receive from it in the preſervation and encreaſe of their Beauty. I am nevertheleſs rather of their mind who believe that the Oil of Talk of Antient Philoſophers, is an Operation upon ***Luna*** or Silver; or even the great work in white, which poſſeſſes the higheſt luſtre of white that it is poſſible to ſee in any ſubſtance, and muſt infallibly be capable of performing that which is hoped from this Oil of Talk ſo much cryed up hitherto.

The principal Operation made upon Talk, is the Calcination of it; for this Stone being of extraordinary fixedneſs, it muſt be the ſcope of our Artiſt to open it by this firſt preparation; and thoſe that have kept pretty big lumps of ***Venetian*** Talk ſix intire weeks in a Glaſs-houſe-fire, without finding any alteration in its weight, colour or aptneſs to crumble, are capable to deter and aſtoniſh any that takes in hand this work, to reduce it in ſome unctuous matter, and make that noble white thereof, which Ladies do with ſo much curioſity and at ſo great charges ſeek for. And as there is none of them which call themſelvs ***Chymiſts***, and pretend any thing to the knowledge of this noble Art, who doth not boaſt to have ſome ſecret Receipt thereupon; we ſhall nevertheleſs ingeniouſly confeſs, that this matter is too fixed to pretend any liquid ſuſtance from it, unleſs it be by the help of ſome Salts capable to penetrate this Stone; for I find no Experience or Reaſon that can convince me to the contrary, after I have tryed the invincible fixedneſs of the true Talk, whenſoever I went about to calcinate it without any addition. But making uſe of ſome Salts and Spirits, I do do not deny but that a good Loſmetick may be made to change and whiten the Skin: But it cannot be avoided that the Sulphur of this Stone ſhould ever keep with its ſelf ſome portion of the fatneſs of the Salt or Saline Spirit which returns to a Body. Therefore great diſcretion and heed ought to be had in making uſe of theſe things, leſt the Skin be worn out and ulcerated, inſtead of ſmoothing and rendering it fair, delicate and white.

The Chymical Preparation of Venetian Talk.

TAke of the true *Venetian* Talk, pure, clean, and of a greeniſh colour, and reduce ℔ ß in very ſubtil Pouder in an Iron Mortar, made almoſt glowing hot in a good fire, as alſo the end of the Peſtle to be uſed; or which is yet the beſt way, file it with a ſoft File into a very ſubtil and ſmall Pouder; mix diligently this ℔ ß of Talk in Pouder, with ℔ j of very white Tartar and very dry; then put this mixture in a great Crucible in a Wind-Furnace, and calcine it with a fire of the laſt and utmoſt degree, during the ſpace of xij or xvj hours; which time expired, beat the maſs to Pouder in a hot glowing Mortar, then put the Pouder in a gray or white earthen Pan in a Cellar, to convert the Salt of Tartar into Liquor, and let it run in a ſmall Diſh by the mouth of the Pan: all the Salt being ſeparated, dry the remaining ſubſtance, and with four times as much weight of very pure Salt-peter, put the whole in a new ſtrong Crucible, able to bear the violence of the fire; put this Crucible in a Wind-Furnace, and give it fire by degrees until you bring it to the higheſt pitch, and your Talk will melt into a very white and almoſt tranſparent Maſs. This Maſs put in a cool and moiſt place, and it will diſſolve in time into an unctuous and glutinous Liquor. Which Liquor is to be uſed for taking away and blotting out of all ſpots, roughneſs and ſcurf, and excreſcences of the Face and Skin, in the Shoulders, Breaſts, Arms and Hands; but this Liquor muſt be dextrouſly and diſcreetly applyed with a Pencil, and very ſuperficially; and above all, care muſt be taken that it ſhould not lie long upon the part, which muſt immediately be waſhed with Water of White-Lillies, Bean-flowers, or Nenuphar-flowers, Water turned white with ſome few drops of Tincture of Benjuin.

But when you will uſe this unctuous Liquor without any fear of danger, put ſome part in a Matraſs and pour upon alkoholized Spirit of Wine, and digeſt together in a heat of Horſe-dung or vaporous Balneo, during the ſpace of three weeks; then draw off the Spirit by diſtillation in the ſame Bath, and cohobate at leaſt twenty times, adding every time ℥ iv of new Spirit of Wine; and ſo ſhall you kill all the corroſiveneſs which was remaining in the Liquor, and have a ſubſtance fitter then any other whatſoever to clear and whiten the Skin; provided that the hands and face or other parts be well and duly cleanſed before with ſome good Paſte, before you make any application of the Liquor.

To

To prepare a Cream of Talk, of leſſer trouble and work then the forementioned.

TAke q. v of Talk reduced into a very ſubtil Pouder, which ſprinkle two or three times with ſome excellent diſtilled Vinegar in a Glaſs-Diſh, and that until it be reduced to a kind of Paſte, which ſtir with a Glaſs Spatula two or three hours, encreaſe the Vinegar gently by degrees until you have poured enough for the Talk to ſwim in it boyling; then put the Diſh in Sand, and give it a gradual fire until the matter boyls, and inſenſibly will raiſe on the top thereof a fat ſcum, which you muſt very carefully gather with a Skimmer, and thus continue till no more will riſe: after this evaporate gently the ſuperfluous moiſtneſs of the Vinegar, and keep the remainder for uſe, as being one of the beſt Coſmeticks of the World. And if you will uſe it to waſh the Face or other parts, diſſolve and mix ſome part thereof with Phlegm of Spirit of Salt, and immediately apply a Pomander or Ointment made with Marrow of Sheeps-Trotters, Spermaceti, Virgin-Wax, and a little Pork-Suet well waſht; in this Pomander mix ſome of the Cream of Talk, and a few Benjuin-flowers, and the clearneſs, whiteneſs and pureneſs of the part anointed therewith, ſhall laſt above a fortnight.

The Chymical Preparation of Red Talk.

IT is not ſufficient to have ſhewed ſome kind of Preparation upon the white Talk, which conduces onely for outward beautifying, but we will alſo deliver the manner of making a good inward Remedy with red Talk. For as this Stone hath a Mineral Sulphur in its center, which participates of the Solar Nature, ſo muſt we work its extraction by the Salts which are capable to open the bodies and penetrate them, to ſeek therein the hidden, and as it were impriſoned vertue thereof.

To this end, ℞ ℥ iv of red Talk, and reduce it to a ſubtil Pouder in a red hot Mortar, mixing this Pouder with as much well prepared Salt of Tartar, according to *Sennertus*'s Preſcription, as we have taught heretofore; put this Mixture in a Crucible, and calcine it together in a Wind-Furnace during the ſpace of twelve hours, which done, reduce to Pouder in a hot Mortar the matter you ſhall find in the Crucible, and put this matter in a

Matraſs, pouring upon it tartarized Spirit of Wine four fingers high; digeſt them together in the vaporous Bath, until the Spirit hath got a high and red Tincture; then draw it off by inclination, and pour on new Spirit. Thus continuing to digeſt and extract until the Spirit takes no more colour; then filtrate all the Tinctures, and put in a Cucurbit, to draw off the three parts of the Spirit in a ſlow heat of Balneo; and ſo ſhall you have a Tincture inwardly loaded with the internal Sulphur of red Talk, which is a Preſervative and curative Remedy of the Plague, and of all other malignant Diſeaſes. This Tincture is given from iij drops to xij, in Wine or Broth for preſervative; and if for curative Remedy, it may be adminiſtred to ſick Perſons; the Doſis may be encreaſed of a juſt half proportion, and given in a ſmall Centaury, Scordium, Germander-Water: It is a Soveraign Cordial, a Cephalick and wonderful Stomachick, which leaves no impurity in the ultimate Digeſtions, but drives it away by inſenſible tranſpiration, by Urine, or by Sweat.

Of the Calk or Star-Lime-ſtone, and its Chymical Preparation.

THE vulgar preparation of Quick-Lime made by violent Calcination of ordinary Quarry-ſtones, or great Flint-ſtones, is ſo common and known by all perſons, by the frequent and neceſſary uſe of it in Buildings, that it will be ſuperfluous for us to ſay any thing thereof. It ſuffices us to ſay by the by, that it hath very little uſe in Pharmacy, but in ſome other Preparations beſides, and after Calcination: for Quick-Lime hath no other vertue, outwardly applyed, then to diſcover an ingenuous Cauſtick and Corroſive Nature: but being prepared, as we ſhall teach hereafter, it becomes capable of ſupplying Remedies altogether unknown to the vulgar, both inwardly and outwardly applyed.

How the Water of Quick and Prepared Lime is to be made.

℞ ℔ iv of good and well calcined Quick-Lime, in whole lumps, as much as is poſſible, ſuch being leſs offended by the outward impreſſion of the Air and Water, and whole in its vertue; put it in a great Baſon, pour upon it Rain or River-Water half a foot high; let it be ſoftly diſſolved, and agitate it from time to time with a Wooden Spatula or Slice, and the

Water being well loaded and impregnated with the Salt of the Lime, filtrate it and keep it for uſe. And thus reiterate, diſſolving with new Water three times, filtrating and keeping aſunder. Then put the remaining Lime upon a Filter in Trochisks to dry; it is that which in Shops is called *prepared Calx* or Lime, which is to dry ſoftly without any biting or mordacity: wherefore it is moſt excellent for the cure and cicatrizing malignant Ulcers, and principally thoſe that participate of Venerian Infection; It is alſo very good for the cure of Burnings, and may be employed in Liniments, Ointments, Plaiſters, and all Epulotick and Diſiccative Pouders, us'd for Ulcers which are difficult to cloſe again.

The firſt, ſecond and third Water of the Quick-Lime, which were kept each by themſelves, may alſo be employed ſeverally, according as need ſhall require; for they are the ground and chief Ingredient of Waters us'd againſt Gangrenes, and for the Pin and Web, and other ſore Diſeaſes in the Eyes. It may be ſo applyed, even without any other addition, to waſh putrid, foul and corroding Ulcers; and the beſt guide therein may be the experience of the Chirurgion, whether the firſt, ſecond or third is to be uſed, according as he ſhall diſcover by the appearing ſigns, the malignancy of the Ulcer to be greater or leſs.

To prepare the plain Water againſt Gangrenes, and other Symptoms and Accidents thereof.

WE muſt confeſs that this Water is one of the beſt Remedies which at this day are in the poſſeſſion of Chirurgery, to prevent the ſad accidents of Gangrenes, and their ſequal; and being this Remedy is ſo uſeful to publick advantage, I would not hold it longer in ſilence; though it will not perhaps pleaſe too many who keep it ſtill by them as a grand ſecret; but this noble Medicament, owning its invention to the ſearch of Chymiſtry, ſo is it juſt, that by the benefit of the ſame, and the ingenuity of this Treatiſe, it ſhould be communicated to all Members and Practitioners of Chirurgery, which are not yet acquainted with the ſame, that they may charitably beſtow it for the help and cure of poor ſick Patients: for it is a great gift and benefit of God, to be purchaſed almoſt without charge, and eaſily to be found every where, wherefore alſo it ought to be liberally diſpenſed and imparted to ſuch poor Patients as ſhall be in want of it. All the ſecret thereof doth only conſiſt in mixing with greater or leſſer proportion, ſublimate corroſive Mercury in either of the three Waters, according as it is intended and deſired to be more or leſs ſtrong and violent: and ſo the Doſis of the mixture depends upon the judgment and skill of the Chirurgeon who intends the uſe of it, for preventing the accidents of Gangrenes, or to ſtop it, & prevent the encreaſe and progreſs of the ſame, when it hath already ſeiz'd upon, and deaded ſome part of the fleſh: for the ſpirits and hidden fire which are in this Water, animate and vivifie again the natural heat, call back the vaniſht Spirits, already baniſhed by the beginning of corruption and mortification, and by their ſubtilty and quick penetration ſeparate the dead fleſh from the quick. But in the mean while it muſt be obſerved, to mix diligently in this miraculous Water ℥ ij or iij of excellent Spirit of Wine freed and depurated of all its Phlegm, which may have two very conſiderable and principal ends. The firſt is, to render this Water more active and penetrating when neceſſity doth urge, and the danger is at hand; The ſecond, that the Spirit of Wine may unite it ſelf to the Salts and Spirits of the Quick-Lime, and the corroſive ſublimate, and ſo kill and temperate them, that they may in no wiſe be noxious and hurtful to the nervous and ſinuous or membranous parts, which remain bare during and after the action and time of uſing the Remedy: and it belongs only to ſuch as are well skilled and verſed in the knowledge of the action and reaction of Spirits and Salts with and againſt each other, to give a ſolid and pertinent reaſon of thoſe effects that are produced by this admirable Remedy, after the mixture of the Calx and Quick-Lime ſublimate and Spirit of Wine. This Water thus compoſed, is not uſeful onely to ſuch purpoſes as we have ſaid above, but it is alſo ſingular in all Wounds and Shots, where there is any breaking of bones, and a great heat with much pain, provided in the beginning you add the Juyce of a dozen River-Crawfiſhes pounded alive, and ſprinkled with a little Phlegm of Allom.

But there is another Water yet againſt Gangrenes, Ulcers and Sores of the Eyes, beſides that we have already taught, the deſcription whereof we will give for the ſake both of Surgeons and their Patients, though held very ſecret by thoſe who daily uſe it with great applauſe and ſucceſs: after which we will give the deſcription of the Ophthalmick-Water, and the diſtillation of the true Spirit of Quick-Lime, which is none of the leaſt Maſter-pieces of our Art.

The

The wonderful and true Water againſt Gangrenes.

℞ ℔ xx of Rain or River-Water, put them in a great Pewter Baſon, and throw therein iv pound of good unmixt or unaltered Quick-Lime, and let it by a ſlow ebullition ſoftly quench it ſelf without agitation; and when you ſhall perceive the extinction to be performed, and that the boiling and working of the Lime is over, add thereto ℥ ij of Arſenick in Pouder, and ℥ j of good well choſen Maſtick alſo in Pouder; ſtir all together and mingle it conveniently with a Wooden Spatula or Slice; then let it ſettle until the matter be well gathered in the bottom, and the Water ſwimming over very clear; then pour out all the clear, decanting it ſoftly without ſtirring the bottom, and filtrate the remainder to joyn both again in a gray earthen Pan, adding to it ℥ ij of corroſive Sublimate in Pouder, ℥ vj very good Spirit of Wine well dephlegmated, and ℥ ij good Spirit of Vitriol; put all this mixture, being yet unſetled, in Glaſs Bottles, and keep it for uſe. If you make uſe of this Water for any other purpoſe then for ſore Eyes, you muſt ſhake it, and mix the bottom with the clear, and ſo uſe it againſt the Gangrene and all its accidents, the cure of old running Sores, cancerous ſinuous and malignant Ulcers; againſt all preternatural and painful outward heat, and againſt all external inflammations; againſt Phlegmons, Etiſipela's, burnings, and even arthritical pains proceeding from hot cauſes; and finally, againſt inflamed and dolorous Wounds. If it ſeems to be too ſtrong or violent, let it be tempered by adding a greater quantity of Spirit of Wine, or Phlegm of Vitriol, or Allom. But if you will uſe it for Ophthalmies, and ſmall Sores in the corners of the Eyes, or in the Eye-lids, you may temper it with Water of Juyce of Plantain, or of great Celandine, or even with Phlegm of Allom; but above all things, take care that the Water you do uſe for the Eyes be well filtrated, and that no part of the ſetling in the bottom of the Glaſs ſhould be mixed with it: The application of this Water is commonly made with fillets of Linnen-Cloth, and I may confidently aſſure, that thoſe that ſhall make uſe thereof, will find it an infallible and ſure Remedy, and almoſt of a wonderful ſucceſs in all the particulars we have ſpoken of.

The manner of preparing the Ophthalmick Water.

℞ One part of the firſt Water of Quick-Lime, two of the ſecond, and iij p. of the third, mix them together, and diſſolve therein ℥ j of Salt *Armoniack* to each pound of Water; put this diſſolution in a Braſs Copper or Baſon, and let it ſtand therein the ſpace of xij or xv hours, or until it be tinged with an oriental ſaphirine colour; then filtrate exactly, and keep it for uſe in a Bottle. This Water is unparallel'd for all Diſeaſes and Blemiſhes of the Eyes, without reference to their Original: for the Salt of the Lime joyned with the volatile Salt of Urine, conſtituting the vertue of Salt *Armoniack*, draw a ſubtil Vitriol from the Braſs or Copper, which are found inſeparably joyned and united together in the Water, and do communicate unto it a refrigerating, cooling, cleanſing and deſiccative quality. I will ſay more yet, That theſe three Salts ſo united, are capable to blunt, kill and deſtroy all the malignancy of thoſe harſh corroding and biting Salts which are mixed in the ſeroſity of the Blood, and are the true occaſional cauſe, not only of the grief, inflammation and ſores in the Eyes; but moreover of all itching, eruptions and Ulcers growing outwardly, and generated in the body of man; wherefore this Water ought and may not onely be uſed againſt the ſeveral griefs incident to the Eyes, but againſt Itchings, Scabs, and Ulcers alſo. And in caſe it had drawn too much of the Salts in reſpect of delicate and tender perſons, or for the quick and nice ſenſe of ſome parts of the body; it may be allayed and ſweetned by adding Eyebright, Euphraſe, Fennel, Roſe or Plantain Water.

To make the Spirit or true Magiſtery of Quick-Lime.

Take as much as you pleaſe of the beſt Quick-Lime you can meet with, reduce it to a very ſmall Pouder, and grind it upon a Porphyry to an Alkohol, or implacable Pouder; then put it in a Cucurbit, and pour upon it by degrees very gently of the ſubtil and pureſt Alkohol of Wine, as much as the Calx or Lime will be capable to drink; for you muſt have a ſpecial care not to drown the Lime, but let there be only ſo much of this Spirit, that the Lime may thereby be ſatiated without humectation, or appearing in any wiſe above it; then having applyed a Still-head to the

impalpable

the Cucurbit, lute the joynts exactly with a triple Bladder moiſtened in the Whites of Eggs, and ſtrowed with Quick-Lime, both of it and the Recipient; then place your Veſſel in *B. M.* and draw off again the Spirit with a ſlow heat to a dry bottom; and having cooled the Veſſels, open them, & pour again the ſame Spirit upon the Lime remaining in the bottom of your Cucurbit, and go on thus diſtilling and cohobating with the ſame care and precautions until the tenth time, that by theſe reiterated imbibitions, the internal fire, wherein the Spirit, Arcana or Magiſtery of the Lime doth reſide, may be encreaſed and exalted: and that no body may be miſtaken herein, it is abſolutely neceſſary to obſerve all the things we have ſaid, otherwiſe the Artiſt may endanger the loſs of his time, Veſſels and matter. Theſe ten Cohobations being thus performed, take the Lime out from your Veſſel, and grind it moſt ſubtilly, duly and without intermiſſion upon the Porphyry, and add thereto the tenth part of its weight of very pure and dry Salt of Tartar, and as much of the *Caput Mortuum* of the Tartar remaining after the Salt hath been drawn by Elixiviation: But the *Caput Mortuum* muſt be newly dryed and heated before you mix it with the reſt, and the mixture being nimbly and exactly performed, put all theſe matters in a well luted Retort, the matter not exceeding the third part of the empty ſpace and capaciouſneſs of it: then place it in a cloſe Reverberatory Furnace, and to the neck thereof fit a Recipient, to which may be fitted a Funnel or Pipe of a fingers bore, and four inches long, about the middle of the neck receiving the Retort, ſo that the end of the Retort's neck may juſt meet with the upper part of the ſaid Canal or Pipe, that the drops of Phlegm falling may directly joyn to the ſmall Recipient, that is to be fitted to the ſaid Canal or Pipe. But you muſt note, that you muſt put before in the body of the great Recipient before you lute it, ℥ ij or iij of Alkoholized Spirit of Wine deprived of all Phlegm. The Veſſels being exactly luted together, as much as it may be, and the Lute dry, begin to give your fire by degrees, until that little Phlegm which is about the matter be driven out, and the Artiſt perceiving that no drops more do fall, and that a white vapour is iſſuing out of the neck of the Retort, and as a ſmall cloud creeping along the channel of the great Recipient, where it is attracted by the Spirit of Wine being in the bottom of the Recipient as by a Loadſtone; then let him encreaſe and quicken the fire more and more until all the vapours be over. The Veſſels then being cooled, take off the Lute and open them, pour away the Phlegm as uſeleſs, and preſerve the Spirit you ſhall find in the great Recipient, to rectifie it and ſeparate from it the Spirit of Wine, if it be poſſible: but in caſe they be ſo united as to aſcend together in the neck of the Still, put this Spirit in a Glaſs Diſh ſomewhat thick, and warmed a little beforehand, and ſet it on fire with a little kindled Paper; the Spirit of Wine will conſume and burn away, and the Spirit of Lime remain in the Diſh; which preſerve very carefully as one of the moſt wonderful Agents which Nature and Art can afford, as learnedly ſayes *Baſilius Valentinus*, ſpeaking of the Quick-Lime. This Spirit is one of the beſt, the moſt preſent and ſafeſt Remedies that can be given againſt all kinds of Gout: for it inſenſibly diſſolves and conſumes all tartarous matters coagulated in any part whatſoever of the body, by the potent vertue and ſudden penetration of the internal fire contained in it. It is given from one drop to five, in three fingers height of warm Wine, in the morning faſting; then let the Patient expect the Operation thereof warm between two Sheets, whither Nature determines its actions by Urine or Sweat, in a condition to help and advance the Remedy; otherwiſe it doth act for the moſt part by inſenſible tranſpiration.

There is alſo a very efficacious Remedy prepared with this wonderful Spirit againſt the Stone and Gravel, with one part of ſtones of * Crawfiſhes, and two parts of Calx or Rock-chryſtal, digeſted and diſſolved in ſix times their weight of Spirit of Quick-Lime, and ſo often diſtilled and cohobated in the heat of Aſhes, that all, or the moſt part thereof, be turned into Liquor: of which you muſt give alſo in a ſmall glaſs of warm Wine, from j drop to five, in the morning faſting, to cure radically all thoſe that ſhall find themſelves toucht with thoſe Diſeaſes: for it cleanſes ſo well all the paſſages and conveyances of Urine from that ill ferment, that from that time forward no new matter can be generated or gathered there: this Spirit diſſolves and turns into Liquor all Stones of what hardneſs and roughneſs ſoever; and contrariwiſe, by the action and vertue of its fire, fixes the moſt volatile Spirits; ſo that thoſe which ſhall uſe it either for Remedy, or for a Diſſolvent, may very well be caſt into aſtoniſhment and wonder that Nature ſhould have hid ſo high a Myſtery in ſo vile and ſo contemptible a ſubject as Quick-Lime is; which hath cauſed *Paracelſus* to ſay, by an act of reflection and great wonder, that ſome do throw away and kick with the feet ſuch a Stone or Flint, as would be to him of a greater Revenue then a Cow, did he know the Myſteries which God and Nature hath concealed and layed therein.

* It may be *Crabs-Eyes*, ſo called in Shops.

SECT.

SECTION III.

Of Metals.

METALS are hard bodies, ductile and malleable, proceeding from a Saline and Mercurial Juyce, coagulated in the Earth, by the ſtrength and vertue of the heat of its own Sulphur. Now as we have ſaid above, that all things had their original from Light, which by its ejaculation and irradiation did imprint and ſtamp the Idea and Character of its vertue in Water, as in a general and convenient Matrix, to enable her afterwards to ſupply both Matter and Form, Body and Spirit, Salt, Sulphur and Mercury, all Phyſical Generations: ſo can we now more pathetically and particularly give to underſtand the generation of Metals, becauſe the Water being once ſtampt with the Character of Light, and having received the Spirit and Salt which flow from the ſame Spring, the internal Sulphur begins immediatly to concoct, digeſt and ripen the Embryos by him precipitated, whether Animal, Vegetable or Mineral; and the Water being furniſhed with this fermentative and generative principle, yet undeterminated and apt to be made any thing, is conveyed and driven into all the general and particular Matrixes, which do determine & modifie it according to the Idea and Character of their natural predeſtination in their Creation: For as God hath once created all ſubſtances, ſo has he given them means of ſucceſſion, and perpetuating and preſerving themſelves, which is nothing elſe but that which we call *Nature.* Now aſſoon as the Water is received in a metallick Matrix, or in a place fitted and deſtinated by Nature to the generating of Metals, the Spirit of Salt which is in the Water yet undetermined, & of a general inclination, receives the vitriolick ſtamp, Character and Idea, which is the firſt determination to Metallick Nature, and the internal Sulphur of this embryonated Vitriol, works without any interruption to digeſt, ripen, and concoct and coagulate the Water by him impregnated; ſo that the firſt viſible principle of Metals is a Vitriol more or leſs pure, and more or leſs mixed with metallick ſeeds, according as the Matrix, Water and Salt are found to be pure or mixed. And thus the *Archeus* which directs metallick productions, doth lead and guide them ſafely and by a gradation altogether ſurprizing, and wonderful to the ſcope and end of their natural predeſtination. For it alters and changes the Vitriol into Sulphur of a Metallick Nature, as it is proved by the examining of Marcaſſites, which do already by their weight appear to be Metallick, as alſo by their hardneſs and colour, and have nevertheleſs in them no more then a Vitriol altered and modified by the action of the fire of its Sulphur, as it may be proved by their Anatomy made by the help of Air and Fire, which the Artiſt doth make uſe of to decoct and bring them again to their firſt viſible matter, which is nothing elſe but a Sulphur and Vitriol; though theſe Marcaſſites contain alſo in themſelves ſome embryonated Metals, as appears by the digeſtion and maturation of them made by fire, Salts & Spirits, after which Metals of divers kinds and different natures may be extracted, and ſo *illud quod occultum erat fit manifeſtum*; in ſo much as plauſibly and lawfully Marcaſſites may be called the Rudiments and imperfect Seeds of Metals: which makes me wiſh that pure legitimate and true Marcaſſites of all Metals, and each in particular, might be recovered, that the Chymical Artiſt might have opportunity to open them, and anatomize with much more eaſe, before Nature hath raiſed them to the laſt and higheſt point of their perfection, which is their coagulation, hardning and fixation: for it would ſave much charge and labour, becauſe there would be no neceſſity of making the reinundation of metallick Bodies, to ſeek into the very center of their ſecondary principles, that vertue which God and Nature have planted in them.

Thus much we thought fitting to ſay as a preliminary Introduction to the deſcription of each Metal in particular, and of the Operations which we will teach upon every one of them, which will be enough to guide, and be inſtead of Models to Artiſts, towards reaſoning and working more exactly upon the Family of Metals. Metals are divided into three Claſſes, and that with much reaſon, partly for the diſparity & conformity of their hardneſs, partly for the reſemblance of their Preparations. The firſt Claſſis contains the nobleſt Metals, which are Gold and Silver, or *Sol* and *Luna*; ☉ and ☽, by reaſon of the great correſpondency which is found between thoſe two potent Luminaries, and thoſe two noble Metals; for what the Sun and Moon are in Heaven, the ſame are the Heart and Brain in Animals, and the Gold and Silver amongſt Minerals and Metals. The ſecond Claſſis contains the two inferior and leſs noble Metals and the hardeſt, Copper and Iron, or *Venus* and *Mars*; ♀ and ♂, by reaſon of the anology which is found between thoſe two Planets and thoſe two Metals, and the mutual and reciprocal love alſo which is between thoſe two Celeſtial

Bodies; *Venus* commands over the parts deſtinated to Generation, and all the functions of the Kidnies and Bladder: and *Mars* ſends its influences upon the Liver, the *Cyſtis Fellis*, or Gall-Bladder, Spleen, and adjacent parts of the Ventricle. The third Claſſis, contains the two other leſs noble Metals, which are ſofter and ſweeter then the reſt, *viz.* Lead and Tin; or *Saturn* and *Jupiter*; ♄ and ♃, by reaſon of the reſemblance which is between theſe two Metals, who command upon the Spleen and Matrix of the *Microcoſm*: But of this we will ſpeak more fully when we treat of each Metal aſunder. It is only requiſite to ſubjoin here in general terms all the Operations commonly made upon Metals, to render them uſeful to Phyſick.

The firſt Preparation which our Artiſt is bound to take in hand upon the Body of Metals, is *Purification*. The ſecond is their *Calcination*, which is performed five ſeveral wayes; the firſt of which is *Immerſion*, where Menſtruums or appropriated Diſſolvents are uſed. The ſecond is that which is called *vaporous* or *illinition*, which is performed by vapour or illinition, or aſperſion of the Diſſolvent. The third is *Amalgama*, made by the mixture of the Metal with ☿ or Quickſilver. The fourth is *Cementation*, performed by putting the Metals *ſtratu ſuper ſtratum*, or by ſtratification with ſaline or ſulphureous ſubſtances, either to correct their defect, or to ſtraighten or compreſs, or to open the Metals. The fifth is *Reverberation*, performed by a flaming fire, until the Metal be reduced to a Calx capable of anſwering the deſign and intention of the Artiſt. The third preparation of Metals is *Extraction*, or to ſay better, the maturation and exaltation of the pureſt part, and of what is moſt concocted and digeſted in the internal Sulphur of Metals, from whence the Tincture proceeds. The fourth is *Volatilization*, which is nothing elſe but a total alteration of the metallick Nature, ſo as the Artiſt may be capable to ſubtiliate them in ſuch manner as that they may aſcend or fly, that is to ſay, be turned into a Spirit or Oil, not reducible again afterwards into Metal; which is none of the leaſt Operations of Chymiſtry. The fifth is *Sublimation*, by which Metals are meteoriz'd and reduced into vapours, which ſtick as flowers in the receiving Veſſels: ſome are of opinion, that this work is capable to better and maturate or ripen ignoble Metals, and not without ſome ground. The ſixth is the *Salſification* of Metals, which is the reduction of their body into Salt, a thing not of ſo eaſie performance as many Artiſts have imagined, becauſe ſome think to have done enough, if they have diſſolved the Metals with ſome Saline Menſtruum, and after that coagulated and chryſtalliz'd in a diſſoluble ſubſtance, which is only to ſpeak properly, the Vitriol of the Metals joyn'd to the ſaline ſubſtance of the Spirit, made uſe of for their diſſolution, and returned to a body again with the Calx of the Metal. In the ſeventh place is *Mercurification*, or the pretended reduction of the ſolid and compact bodies of Metals in a Quickſilver or flowing Mercury, much like unto the common or vulgar Mercury; which I am alſo of opinion to be but a miſtake introduced amongſt Artiſts, and crept in only by want of true underſtanding of the meaning of Writers: for they pretend, that when Antient Authors have ſaid, that the bodies of Metals, were to be reduced into Salt, Sulphur and Mercury, this laſt was to be underſtood of a flowing Quickſilver: But the meaning of theſe Philoſophers, to my beſt apprehenſion, when they have ſpoken of reducing their Bodies into Mercury, was only to bring them again as near as could be to their Univerſality, that is to ſay, reducing them to a Spirit coming near the nature of the volatile ſulphureous Salts, which are the laſt ſhelter and covering of the Spirit inviſible in it ſelf, and of coagulated Light: for as the volatile Salt of Vegetable Seeds, contains in its ſelf the ſeminal principle, and the whole vertue of the Plant, ſo likewiſe the Mercury or true Spirit of Metallick Bodies contains in it ſelf their Sperme, their Ingreſs and Tincture, and by conſequence all the vertue which it did poſſeſs, and all its power and activity ſince the firſt moment of its coagulation, to the laſt of its fixation: Wherefore it muſt be the chief ſcope of an Artiſt, to endeavour by his ſtudy and induſtrious working to reduce the King of Metals to that height of perfection, whereby to fit it, and apply afterwards to the rooting out the moſt obſtinate Diſeaſes: but let him reject far from himſelf thoſe pretended ſeekers of flowing Mercury, becauſe beſides that the ſearch and curioſity of it is uſeleſs and beyond humane reach; it is beſides an occaſion of waſting both the precious Time and Eſtate of thoſe that give up themſelves to it, and makes them loſe opportunities of diſcovering ſeveral other things uſeful to them in particular, and next to their Neighbour and civil Society.

Of Gold, and its Chymical Preparation.

GOLD is the nobleſt, the moſt ſolid and fixt of all Metals; of a yellowiſh colour, compacted, and of an almoſt indiviſible union in its ſubſtance; which ſhews it to be compounded of Salt, Sulphur and Mercury brought to the higheſt degree of digeſtion, and for that reaſon moſt fixt and intimately united together. Chymiſts do give unto it the name of

Sol, *Sun*, and attribute alſo to it the ſame Character ☉, becauſe it hath, ſay they, a ſympathy and correſpondency, both with the Sun of the great World, and of the little World, which is mans Heart; and therefore do they aſcribe unto it the vertue and faculty of curing all faintings and weakneſſes; they believe it finally to be the true and lawful Reſtorer of the Balſamick Faculties and natural heat, and the ſoveraign Remedy againſt Deliquiums and Swoonings, loſs of Spirits, and waſting of radical moiſture. But there is an abuſe and miſtake in vulgar Pharmacy introduced by the *Arabes*, which do mingle Leaf-gold in their Confections and Cordial Pouders, as if the digeſtive heat of the Stomach, and the moiſture of imperfect Chyle were capable to alter in any wiſe the ſolidity of this noble Metal; for beſides that no humour analogous to *Aqua Regia*, can be found in the Ventricle which might be capable of diſſolving Gold, yet ſuppoſing it might be performed by ſome ill fermentation of ſuperfluous aliments, it could not but cauſe mortal pains, and make ſuch ulcerations and preternatural colliquations, that they would infallibly deſtroy the ſubject wherein they ſhould be, rather then meliorate and reſtore the vital and animal Faculties, as it is pretended. But ſome perhaps will object, That though Gold be not diſſolved in the Ventricle, it is not altogether without ſome good uſe, by reaſon of the irradiations and emanations of its vertue, which it ſends to the Heart in reſpect of their mutual ſympathy. To which I anſwer, That it will ſuffice for the ſame reaſon to carry it above the body, and thus make an outward application of it more eaſie, and in greater quantity then what can be ſwallowed; and ſo would it prove much more beneficial then being inwardly taken in ſmall quantity, and moreover there would be no leſs of it; which makes us conclude, that unleſs Gold be prepared and opened in ſuch a manner, as that our digeſtive heat may be capable to appropriate its vertue unto its ſelf by the help of the volatile ſulphureous Salts, which are mingled in the aliments of the body either dry or moiſt, or unleſs Art hath already ſo reduced this Metal into Medicine, by the aſſiſtance of Salts and Spirits which may be analogous to thoſe of nature, and free from corroſiveneſs, that it may be rendred fit to be conveighed and driven by the Director of our natural Functions into our very laſt digeſtions, thereby to correct all the defects it ſhall meet with, and purifie by the impreſſion of its Cordial and Solar Vertue, the whole maſs of the venal and arterial blood, otherwiſe no good is to be hoped or expected from it; but contrariwiſe ſome ill effect, being uncapable to produce any other in caſe it be prepared with

Corroſive Salts or Spirits; and being not diſſolved nor opened, it is unfit to do any good.

They that will chuſe well their Gold for Chymical Preparations, muſt take it of the pureſt, and of that which hath received the leſs allay; for to make any difference between the *Indian* Gold, and that of *Arabia, Hungary, Bohemia* or *Germany*, is a very needleſs Nicety, ſince by the ordinary purifications it may be brought to the higheſt degree of purity and goodneſs; and thoſe are the following.

Firſt, There is a purification made of Gold, to take away the ſuperficial ſetling or foulneſs; Secondly, That which is done to take away ſome portion of one or more imperfect Metals, which were mingled either in the Mint or by the Goldſmiths, or finally brought from the Mine. For the firſt purification, waſh the Gold in a crude Lye, or Water impregnated with Tartar and common Salt, which is called a *Bullitory*; or make it boyl, and waſh in *Aqua Fortis* ſomething weak, or mixt with Phlegm of Allom, Salt-peter or Vitriol: theſe three Lotions are ſufficient for the firſt intention.

But when ſome part of imperfect Metals is mixed with the Gold, the ſeparation cannot be made but by dividing the metals aſunder, which cannot be done but by their diſſolution, which is called *Immerſive Calcination*, or by the deſtruction of the imperfect Metal, as when Gold is purified by Lead or Antimony, or cemented with ſubſtances capable to corrode and deſtroy the imperfect Metals mixed with the Gold.

As for the diſſolution, which is immerſive Calcination, it is performed with ij, iij or iv p. of Regal Water, the diſtillation whereof we will teach when we ſhall diſcourſe of Salts; for the Regal Water will only diſſolve the Gold, and the other Metals remain in the bottom of the Veſſel, chiefly if Silver be predominant, becauſe the Regal Water touches in no way the Silver: the diſſolution being made, filtrate it, and gently pour it out by decantation, then precipitate with Oil of ☿ *per deliquium*, or Spirit of Volatile Armoniack Salt, or Spirit of Urine, or throwing it in ſome proportion of Quick-ſilver, which will gather to its ſelf the Gold which was diſperſed in the diſſolution, or by evaporating the diſſolving Water: finally, which way ſoever you reduce the Gold to Calx, there remains no more to be done after, then to melt it in a Crucible with a little Borax, and caſt it into Ingots, and you ſhall have purified Gold.

But if you will only put it in the Capel, and drive it with Lead to ſeparate the heterogeneous Metals, you muſt make your Capel with Bean-Aſhes, putting ij or iij p. of Lead, which with violence of fire and Bellows muſt be driven, as we ſhall more fully deduct when we treat of the purifying of Silver. But becauſe the Capel doth not take away wholly the ſuſpition of ſome remaining part of Silver being yet intimately mixed with the Gold; Artiſts have not found a better way to purifie it totally then to melt it with Antimony, becauſe the Sulphur of the Mineral doth abſolutely corrode and deſtroy, not only all imperfect Metals which might be mixed with the Gold, but it alſo deſtroys totally the fineſt Silver, be it in never ſo little a quantity, if the purification be reiterated three times; which being done, you may confidently ſay that the Gold is very pure, and that there can be no finer, and it is thus performed: Take as much Gold as you will, and add thereto five or ſix parts of crude Antimony, put them in a good Crucible to melt together in a Wind-Furnace, and when the matter flows, throw in about ʒ j of pure Salt-Peter very pure and dry, mixt with ʒ j or ij of filings of Iron; and when all is well melted & flowing together glowing, and of a colour tending towards Partridge Eyes, (as they call it) throw the matter in a ſharp earthen Veſſel, ſuch as is fit to make Regulus, (of the figure of an inverted Pyramid) being hot, and firſt anointed with it with a piece of Wax down to the bottom; and when it is full with the melted matter, knock gently with a Hammer on the brims of your Veſſel until a cruſt and thick skin covers over the matter, that being a great help to make the Regulus fall to the bottom, and ſeperate the feces and ſcum from the pure part: the matter being cooled, ſeparate the Regulus from the skum, and mix it again a ſecond time with p. ij of Antimony crude, reduced to Pouder, and melt as before; and about the end of the melting of the matter, throw a little Salt-Peter and filings of Iron, to ſeparate the reſt of the Regulus from the ſcum or feces, in the impurity whereof ſome part of the Gold might remain yet hidden, and this work may be reiterated even to the third time, that no portion of Regulus may remain untoucht, and by conſequence the Artiſt may reſt ſecure that no part of the Gold is left in it. Then reduce your ſolar Regulus in courſe Pouder, and place it in a good Crucible in a Wind-Furnace, and give it fire on all ſides, above, beneath and in the ſides, to drive the Antimony by ſmoak: you may alſo add to it the help of Bellows to advance the work, and ſo give it fire, continuing to blow untill all the ſubſtance of the Antimony be exhaled into Vapours, and the Gold remaineth pure and clean in the bottom of the Crucible. They that will not be at ſo much trouble, may make uſe of the Regulus of Antimony ready prepared to purifie their Gold: but the firſt way is the beſt, becauſe the Regulus is already diveſted of the greateſt part of his external

Sulphur, which is the fitteſt for corroding the imperfect Metals mixt with the Gold.

It remains we ſhould ſpeak of the third way of purifying Gold, which is Cementation, being nothing elſe but putting the Gold beaten into thin Plates ſtratified in a Crucible, or unglazed earthen Pot of a convenient bigneſs, with Common or Regal Cement, and the Plates thus well fitted, giving a circular fire by degrees the ſpace of three or four hours, then encreaſing it during the ſpace of ſix hours more, in ſuch a manner as the Pot or Crucible may become glowing red at the end of the Operation of the fire. And thus ſhall you find the Plates of Gold purged of all that imperfect Metal which might have been lurking in them, the matter of the Cement having deſtroyed, burned and calcined the Metal; then grind the maſs found in the Crucible, and waſh the Plates, to purifie them afterwards by melting with a little of Salt-peter and Borax, or with corroſive Sublimate.

To make the Vulgar or Common Cement.

℞ Of Brick-duſt ℥ iv, dryed Salt ℥ ij, and of dryed and pure Salt-Peter ℈ ij, and as much Verdegreaſe; reduce all to Pouder each by its ſelf, and mix together to make the vulgar Cementation. But note, that you muſt ever begin by the Pouder of Cement to lay the firſt bed of your ſtratification, then lay over it a Plate of the Metal, and thus proceed by alternative Beds, until the Pot, Box, or Crucible be full, and order it ſo that the uppermoſt lay be alſo Cement; then cover the Veſſel with a very cloſe and exactly well fitted Cover, and lute it with a good Lute not ſubject to crack, and well dryed before you put it in the fire.

To make the Regal Cement, unto which only Gold doth reſiſt.

℞ ℥ iv of Brick-duſt, Armoniack Gem, and common Salt dryed, *ana* ℥ j; mix them together, being reduced to Pouder, and make a Paſte thereof with Urine; and with this make your Cementation, ſtratifying it with the Plates of Metal. There are yet ſeveral kinds of Cements more or leſs corroding the Artiſts intention; there are alſo ſome that are only ſtraightening and fixative: but as they do not belong to our preſent purpoſe, nor concern any wayes the preparation of Gold for Phyſick, we think it unneceſſary

neceſſary to mention them here, leaving to the curioſity of thoſe that will enquire after, to ſearch for them in ſuch Authors as have purpoſely treated of Metallurgy.

Of the Calcination of Gold whereby to open it.

IT is not enough for an Artiſt to have purified his Gold, and ſevered from it all kind of heterogeneous ſubſtance; for as Gold is a ſolid, compact, cloſe and fixed Body, it muſt be open, that his endeavours, in diſſolving the ſame to extract the ſubſtance he ſeeks for, may not be fruſtrated; and this he cannot attain but by Amalgamatory, Cementatory and diſſolutive Calcination, all which do prepare and reduce to Pouder and Calx, which afterwards may be put to a Reverberatory Calcination; We ſhall treat of each as briefly as may be, that the Artiſt may be inſtructed without confuſion.

The Calcination which is performed by Amalgamation of the Gold with Mercury or Quick-ſilver, is free from ſuſpition of any violent Corroſion, which may impart to the Gold any kind of hidden corroſiveneſs, as it is generally feared all Salts and corroſive Spirits will do: though we muſt confeſs however, that neither Spirits nor Salts can be capable to communicate any ill quality to Gold, neither diveſt him of the Character of being a Metallick Body, unleſs they be extraordinary Salts and Spirits, and to the knowledge of whom thoſe Authors which have left us any thing by Writing have not attained; or in caſe they have ſaid any thing of it, it hath been in ſo obſcure and ænigmatical terms, as it is plain to be ſeen, that either they would not be underſtood by others, or could not underſtand themſelves: for there is not one Artiſt but knows that Water and Fire can purge the Calx of Gold from thoſe impreſſions of Corroſive Salts and Spirits, either by Lotion or Reverberation: wherefore it muſt remove all occaſion of fear from ſuch as would entertain any ſcruple in this particular. For all what in paſt-time Artiſts have done, or do at the preſent, is to no other end and deſign then to open the body of Gold, and render it capable of being diſſolved and extracted without any Corroſive. We will deliver in the following Diſcourſe, the ſureſt Way and Method which Practice and Study hath brought to our knowledge, leaving the reſt to the diſquiſition of ſuch as will make a further progreſs in this Work.

Amal-

Amalgamation of Gold and Mercury.

Beat in very thin Plates, Gold three times refined by Antimony; and being cut very ſmall with Sheers or Sciſſars,put ſome part of the Gold in a ſmall Crucible, and heat it red hot; and at the ſame time put in another Crucible ℥ vj of crude Mercury, and place it alſo to the fire until it begins to ſmoak, then pour it upon the Gold thus red, and ſtir them both nimbly together with a ſmall ſtick of Wood, and when all is reduced to a convenient ſmoothneſs,throw it in a Diſh half full of Water; this done, throw away the firſt Water, and pour new freſh Water upon the Amalgamation, and ſtir and waſh it therein to ſeparate and cleanſe away all the blackneſs and fuliginoſity thereof,and thus proceed until the Water comes off from it as clean as it was poured on; this done, put this Amalgama which is tractable and unctuous in a ſmall Retort, to the neck whereof fit a Recipient with Water; place this Retort between four Bricks, and give it an open fire by degrees, until all the Mercury be come over the Helm into the Recipient, and the Gold remains pure and open in the bottom of the Retort; but that cannot be done neither at the firſt nor ſecond time; contrariwiſe,the Amalgamation and Diſtillation muſt be reiterated ſucceſſively at leaſt xx or xxx times, even until the Gold remains open, ſpongious, and capable of being reduced to Pouder of it ſelf. Now as that requires a toylſom and tedious Operation; Artiſts have found a way to ſeparate and diſcontinue in a leſs time, and with much more ſpeed, the parts of Gold after Amalgamation, which is performed by cementing it with common Salt deſiccated, or Pouder of Brimſtone; for the Amalgam being grounded with double its weight of Salt and Brimſtone, it diſcontinues or ſeparates its parts into Particles or Atomes ſo ſmall, that it enables the fire,afterwards joyned to thoſe matters,to calcine it with much more eaſe; and thus it is much ſooner reduced into ſubtil Pouder, and ſo well opened, that it is capable afterwards of being reverberated, and brought by the ſole action of fire to a fitting ſtate of Rarity, and requiſite ſpungeouſneſs, which is thus performed.

The

The Calcinatory Cementation of Gold.

THough we have ſpoken above of the Cementation of Gold,our Artiſt ſhall remember that it was only to teach how to try and purifie the ſame: But what we are now about to teach, is to the end of Calcining and opening its Body,as we have already ſaid; the Artiſt then ſhall thus proceed therein. Let him take the Amalgam, after it is well waſht, and dried with a clean Linnen Cloth, ſo that all moiſture be taken off, and preſs and wring it as much as he can through a piece of Chamoy Skin, to ſeparate from it the ſuperfluous Mercury; then let him weigh the remainder, and grind it on a Porphyry-ſtone with double its weight of *ſulphurvivium* or quick-Brimſtone poudered, and that until the Brimſtone and Amalgam be ſo exactly united and commixed, that you may diſtinguiſh neither of the ſubſtances; then put this Pouder in a Crucible of an indifferent bigneſs, that none of the Gold may be loſt by the cracking and working of the Brimſtone; cover alſo exactly the Crucible with a cover, having a hole in the top of the bigneſs of a writing Quil; then lute the cover of the Crucible, and give it a circular fire by degrees, until it begins to grow red hot, and the Brimſtone taking fire, evaporate by the hole in the cover; this done, which you ſhall know by the ceſſation of the flame, draw the Crucible from the fire and open it, and you ſhall find the Gold ſwelled up,and ſo diſcontinued and diſ-joynted in its parts, that it ſeems to be a Spunge: This grind afterwards with three times its weight of common Salt well deſiccated,or ſtratifie it only in a Crucible; to which put a cover without a hole, and having luted it,put it in a circulatory fire, which encreaſe by degrees until the Crucible becomes red; then ceaſe the fire, and the Crucible being grown cold, take the matter and grind it, or work on a Marble Morter to diſſolve the Salt; and thus ſhall you have your Gold in very ſubtil Pouder or Calx. Then reiterate this Amalgamation and both Cementations with Brimſtone and Salt,each of them ſeven times, which are in all 21 Operations, and ſo ſhall you have a Pouder or Calx of Gold capable of being expoſed to Reverberation, as we ſhall now declare.

The

The Reverberation of Gold.

TAke the prepared Calx of Gold, as it is taught before, and put it upon a flat Tile, or ſome Stone of ſufficient hardneſs to endure well the fire; cover the Gold with a Muffel, which is an Inſtrument us'd by Goldſmiths to perfect the melting of their work, when loaden with Enamel; cover the Muffel with good dry & well ſeaſoned Charcole all about, except towards the forepart, where it will ſuffice to have only a ſmall Iron Plate, which may be removed at will, that the Gold may be ſtirred ſometimes with a ſmall clean and well poliſhed Iron Rod; then kindle the fire, and continue it until the Calx of Gold be very much ſubtilitated and open, and exalted to a red purple colour: then may you ſay confidently, you have a true Calx of Gold which is in a fit capacity and condition to be extracted and diſſolved, when you have compaſſed the knowledge of thoſe ſweet and gentle Menſtruums (capable to effect it) who may have ſome analogy and ſympathy with our natural Spirits and radical moiſture: for until this true diſſolution and radical extraction of Gold be thus attained unto, I give no heed or belief to the pretended Remedies which are prepared for Gold by any other way, and commonly are called *Potable Gold, Tincture*, &c. For I could not yet have the fortune to ſee any of the Liquor or Subſtance which was not again reducible to a metallick Body, which condition doth abſolutely contradict the ſenſe and opinion of ancient Writers concerning this matter; not that I deny it abſolutely poſſible to diſſolve and extract the Tincture of God, but I rather chuſe to make uſe of other ſtrengthening and cordial Remedies, until by my own experience, or the communication of ſome other more fortunate then my ſelf, and more knowing, either by his own ſtudy, or manuduction of ſome Friend, I may be perſwaded of the truth of this matter. But becauſe there are ſome very noble and curious Preparations for the diſſolution, precipitation and extraction of Gold, which are capable to bring our Artiſt to much knowledge, and raiſe his thoughts to the meditation and diſquiſition of ſome better matters, and that theſe Preparations are part of Remedies not to be deſpiſed and undervalued, I have thought it neceſſary to deliver here the proceſs thereof; as alſo of a Solar Sublimation, which is admired by ſome, and pretended to be a very good Tincture.

To

To prepare the Crocus and Tincture of Gold.

Take ℥ ß of Gold refined by Antimony, and beat it into very thin Plates or Leaves; then put it in a Cucurbit, with ℥ x of very good well refined Salt-peter, ℥ viij Roch-Allom, and ℥ v of very pure common Salt; pour upon this ℥ iv or v of diſtilled Rain-Water; then put the Cucurbit in Sand, and give it a fire to cauſe the whole to boyl; and thus continue till all the Gold be diſſolved, which will be perceived in the colour of the Water remaining tinged with a very fair yellow; and when no more diſſoluble ſubſtance ſhall appear in the bottom of the Veſſel, then continue the fire ſomething more ſlowly, and evaporate the Water to a dry bottom, and in it will remain a high coloured maſs, containing in it ſelf the diſſolved Gold, and diffuſed before through the whole ſubſtance of thoſe Salts. Take half of this maſs, reduce it to Pouder, which pour in a Matraſs, and put upon alkoholizate Spirit of Wine three fingers high; put a Blind-head upon the Veſſel containing your matter, and place it in Sand, giving it a fire of Digeſtion and Extraction, and in a ſhort time the Spirit will be ting'd with a very pleaſant yellow colour: this Spirit having laid in digeſtion the ſpace of three dayes, you muſt filtrate it, and pour on freſh at the ſame height, and continue the digeſtion of it, till it hath attained the ſame colour of the firſt Spirit already drawn off; and ſo proceed in this digeſtion and extraction, until the third or fourth time, or rather until the Spirit takes no more Tincture; then joyn all theſe Tinctures together, and being filtrated, put them in a very clean and dry Cucurbit, which place in *B. M.* to draw off with a ſlow heat by diſtillation, the three parts of the Spirit, and you ſhall have in the bottom a yellow Tincture, containing the beſt part of the Gold diſſolved and extracted in and by the Salts, ſo opened & united to this Spirit that it forſakes in no wiſe, unleſs it be to coagulate it ſelf in the form of a yellowiſh Salt, when the Spirit is too much loaded with it; for this coagulation doth not hinder it from having ſtill its colour, and a bitter harſhneſs, which ſhews the Gold to have diveſted its Body ſo far, as to become an analogous ſubſtance to its vitriolick principle, wherefore it hath the taſte and reliſh. I do not deny but that this Gold may be in a manner reduced to a body again; but I deny that it may be altogether brought to it: and that ſince the moſt pure Spirit of Wine hath been capable to extract it from the Salts, that had diſſolved it by the only help of Rain-Water, part of this Gold muſt of neceſſity

ceſſity be ſo altered, as to have been brought ſome part of the way towards its firſt matter. Wherefore I do not altogether reject the inward uſe of this Tincture of Gold, though it hath not yet attained all the perfection which the true Tincture or true potable Gold ought to have: for as I am convinc'd by the experience of many of my Friends, and my own in particular, I cannot contradict it, ſince we make uſe every day, with very good ſucceſs, of the Diſſolutions and Salts of other Metals, though yet reducible to a metallick Body, as it appears in the Remedies taken from *Mars* and *Saturn*, which have alſo in them this ſweet vitriolick and pontick Salt, according to their reſpective propriety and nature, as Gold alſo hath its bitterneſs: And nevertheleſs, the taſte of theſe Preparations which are made upon *Mars* and *Saturn*, are commonly taken by us for concluding tokens of their vertue, and of thoſe good effects we hope from them, which makes me not to be averſe to recommend the uſe of this Tincture, provided it be adminiſtred in a convenient time in a proper Menſtruum, and the Doſis be exactly obſerved according to age, ſtrength, and the exigency of the Diſeaſe. The Doſis muſt be from *gutt*. ß, to iij or iv, in Wine, Broth, Scorzonera-Root-Water, Buck-horn or Balm-water. The Diſeaſes for which it is moſt proper, are all thoſe that have ſome virulent quality, or ſome malignancy; all thoſe wherein ſtrength or ſpirits does fail, or is impared; the Patient muſt be covered after he hath taken it, and ſo expect the moſt calmly and patiently he can the effects which this Remedy will produce, which moſt commonly happen by Sweat, ſometimes alſo by Urine and Stool; for as it naturally doth ſtrengthen all the natural Functions, ſo doth it drive away all the evil and heterogeneous matter which it meets with in the body, by thoſe Emunctories which Nature hath prepared for that end, when the impurities are too groſs, and cannot penetrate from the Center to the Circumference, by ſenſible or inſenſible tranſpiration.

To prepare the Crocus of Gold.

Take the remainder of the maſs left after the evaporation of the diſſolution of the Gold, with Salts above mentioned, and diſſolve it in a ſlow heat, with as much diſtilled Rain-Water as will be neceſſary to diſſolve it; filtrate this diſſolution through Paper, and precipitate it with a ſufficient quantity of Oil of ☿ *per deliquium*, poured upon it drop by drop, unleſs the Gold be precipitated to the bottom; then let it ſettle, and ſeparate by decantation the Liquor ſwimming above it, and edulcorate the Solar

Crocus with diſtilled Rain-Water, then dry it gently and ſlowly. You muſt alſo precipitate again the Liquor ſeparated from above the Crocus with Spirit of Urine; that in caſe there ſhould remain yet any portion of Gold, it may be drawn off: after this, edulcorate what hath been precipitated, and dry it, to joyn to the firſt Crocus, and reverberate in a Crucible, with a moderate heat, the ſpace of about a quarter of an hour, and ſo ſhall you have a Solar Crocus very open, and of a fair purple Violet colour, which is an excellent Diaphoretick, and a Cordial not to be deſpiſed. The Doſis muſt be from *gr.* ß, to v or vj, in ſome Conſerve or Cordial Gelly. There may alſo a very excellent Diaphoretick and Comfortative Pouder be made out of it.

Solar Diaphoretick, Cordial Pouder.

Take of Solar Crocus ℥ j, of very good Saffron ℈ ij, Bezoar Mineral ℈ iv, Vipers Fleſh ℥ iij, diſſoluble Magiſtery of Pearls and Coral *ana* ℥ ij, Ambergreeſe allayed with a little Oil of Cinnamon, and of the outward rind of Lemon, and ground with ℥ j, *ſug.* ℈ j, of Oriental Musk, diſſolved with Spirit of Roſes, *gr.* x; grind each of theſe ſubſtances, and triturate them ſeverally; then mingle together, and keep in a Silver Box, ſhutting it very cloſe with a Screw, or in a Glaſs Viol well ſtopt, to uſe it when occaſion doth require, as a ſoveraign high Cordial, and wonderful Sudorifick. The Doſis of which is from vj *gr.* to xxiv, in Conſerves, Gellies, Cordial-Waters, Wine, or finally, Broth, as it will ſuit beſt with the nature of the Diſeaſe, and agree with the conſtitution of the Patient. It is an unparallel'd Remedy in all Peſtilential Maladies, Malignant Feavers, Meaſels, Small-Pox; and moreover, it is generally good where there is any neceſſity or occaſion of repairing ſtrength.

To make the Sublimation of Sol.

To attain to the perfection of this work, take good Regal-Water, ſuch as we ſhall teach hereafter how to make, when we ſhall treat of Saltpeter, ℥ iij, and being put in a Matraſs of a ſufficient capacity; diſſolve in this Menſtruum ℥ ß of laminated or Leaf-gold very thin, refined by Antimony, and cut very ſmall; then place it in Aſhes to make the diſſolution perfect; which done, pour your diſſolution in a ſmall Retort, and place it in Sand, fitting to it a Recipient; and draw off ſoftly about the fifth part of the Menſtruum again, or a little more; then ceaſe the fire, and pour upon the matter remaining in the bottom of your Retort, ℥ iij of new Regal-Water, and go on in drawing it off by diſtillation as before; and thus proceed with new Water to the fourth time; but at the fourth time, let the bottom of your Retort be ſomewhat near the bottom of the Veſſel wherein the Sand is held, that there be no more then a finger thick of Sand interpoſed; wherein, to give it a more intenſe fire towards the latter end of your Operation, that ſome part of the *Sol* may be ſublimated with the Armoniack Salt of the Regal Water: for all the liquid Menſtruum being aſcended and paſt through the neck of the Retort, the violence of the fire, dexterouſly given by the Artiſt towards the end, doth raiſe the Salts of the Regal Water which the Gold had kept, and reincorporated to its ſelf in the bottom of the Retort, which ſublimate themſelves towards the neck of the ſame, and carry along with them that portion of Gold that was moſt open, which ſome think to be the Sulphur or Soul of the Gold; though in this miſtaken, becauſe ſome may be yet brought again to a metallick Body, though not all: wherefore ſome vertue is alſo to be expected from theſe Chryſtals, or Flowers, as red as Saffron, which are found in the upper part of the Retort, and in its neck, in caſe the Artiſt hath well obſerved the requiſite circumſtances in this curious Operation, and pleaſant to behold. Now the Armoniack Salt which ſublimates and elevates its ſelf in this Operation, is of a volatile ſulphureous nature, and conſequently carries up along with its ſelf the moſt ſubtil parts of the Sulphur of Gold, which the high and intenſe colour of the ſublimation teſtifies, and the diminiſhed weight of the Gold remaineth in the bottom. Take then all this ſublimated matter, and put it in a ſmall Matraſs, and pour upon an inch high of Tartarized Spirit of Wine, which will immediately be tinged with a very fair yellow colour; then put this Matraſs, ſtopt with a fitting Blind-head, in a vaporous Balneo to digeſt, that the pureſt part of the ſublimated matter may be extracted, which may be performed in the ſpace of three natural dayes; then filtrate this Tincture and keep it for uſe. As for the Body remaining in the bottom of the Matraſs or the filter, it muſt be joyned again with the Gold left in the Retort after ſublimation, and melted together in a Crucible with a little Borax or Salt of Mercury; then by the weight of it you may judge of the decreaſe of the Gold, which may alſo be kept for other uſes by reaſon of its purity. As for this Tincture, it may very lawfully be uſed in Phyſick, having nothing in it ſelf that may render it unacceptable: for if you narrowly conſider what aſcended in the ſublimation, you ſhall know it to be only the pureſt part of the Armoniack Salt, which was one of the Ingredients of the Regal Water, being of it ſelf a volatile ſulphureous Salt friendly to Nature, Diuretical, Diſopilative and Sudorifick or Diophoretical; and moreover, enobled and animated, and loaden with the Solar Sulphur, which it hath carried up along with it ſelf. Moreover, the Menſtruum uſed in the diſſolution and extraction, is a true Preſervative Balſom; and the pureſt of all Spirits, powerful enough to ſtir the action of the other two ſubſtances, and render the penetrative into our very laſt digeſtions, to correct the defects and viciouſneſs thereof, and drive away all impure ſuperfluities from the habit of the body, which for the moſt part are the occaſional cauſes of our Diſeaſes; wherefore it may be adminiſtred from j drop to vj in all malignant Diſeaſes, and chiefly in thoſe that require ſpeedy help by inſenſible tranſpiration, Sweats or Urines; it is a very ſpecial Remedy in all Leproſies, Venereous Diſeaſes, Scorbute, and all its dependences: And if you will uſe it for a preventive Remedy, when you find the body heavy and untoward, itching by fits, full of repletion, and troubled with ſpontaneous wearineſs, you may take a Doſis thereof anſwerable to the age and years of the Patient, to the ſex and ſtrength of the Perſon, either in Broth, White-Wine, or ſome Cordial Water; then being well covered, expect patiently the ſweating fit, which will not miſs coming, or if you cannot conveniently expect, endure this Remedy; it will not fail to expel ſuperfluous humours by Urine, for it is only this ſuperfluity and abundance of feroſities which filleth up the Veins and Arteries, cauſing a pricking in the ends of the fingers, and exciting Head-ach, and grief in the other lower parts of the Body, irritating and ſtretching beyond meaſure the Membranous and Nervous parts thereof.

Of Silver, and its Chymical Preparation.

Silver is the ſecond of Metals in Rank and Dignity, leſs fixt then Gold, becauſe its principal Vitriol (if I may ſo ſay) is not digeſted and united by a perfect union and fixation with its Sulphur, which cauſes it to yeeld more eaſily and quickly then Gold in nitrous, vitriolick, and aluminous Menſtruums, by reaſon of this indigeſt Vitriol remaining in it. Chymiſts do call it *Lune* or *Braine*, because it hath ſome ſympathy with the Celeſtial Moon, or *Luna*, and with the Brain in Man; for which cauſe the Remedies extracted from the ſame, and dedicated to ſtrengthen the Head and animal Spirits : ſo that it is ſaid to be a ſpecifick Remedy for the cure of the chief Affections and Diſeaſes of the Head ; ſuch as are Apoplexy, Epilepſie, Maniack-paſſion, and other Diſtempers, whoſe original and ſpring is in the Brain.

The choice of Silver for Chymical Operations, is not very important, becauſe very little is found with an original purity, which renders it the more beholding to Chymiſtry, without which it cannot even be ſeparated from its impurities contracted in the Matrix of the Earth, or accidentally by allay ; for it is not ſufficiently depurated either in the hands of Goldſmiths or Mint-maſters : for as to cleanſe it from its outward ſoil and impurities, it is eaſily performed by boiling the ſame in Water impregnated with Tartar and common Salt ; after it hath been neal'd, or made glowing red in the fire, and thence caſt into Urine,and then Water, thus ſhall it be very pure in what concerns the outſide : But if you will further purifie its alloy, or allowance in the Mint, you muſt make uſe of diſſolution, which is the immerſive Calcinatian, and melt it, by drying in a Cupel with Lead, purpoſely made for this Operation of purifying Silver, and that before you expoſe it to other Calcinations, which muſt be previous to the Preparations of this Metal, that it may thereby be made fitting for diſſolution and extraction of its Tincture,the three principals whereof are, *Immerſive Calcination*, *Amalgation*, and *Cementation* ; for very ſeldom reverberating Calcination is made uſe, becauſe Silver having leſs fixity then Gold, it needs not conſequently any long and powerful action of the fire to become ſufficiently opened. As for the firſt ſeparation of ſuch impurities and Metals as are mixt in Silver, you muſt diſſolve it in three or four parts of *Aqua Fortis*, made with Vitriol and Salt-Peter, as we ſhall teach hereafter ; then precipitate it in a Calx or Pouder with Salt-Water, *viz.* Water in which you have diſſolved common Salt, as much as the Water can bear, which is alſo called amongſt the Artiſts, *Pontick* or *Marine Water* ; or put ſmall Copper Plates in the ſaid diſſolutions, and weaken the *Aqua Fortis* with common Water, and the Copper will draw and gather to it ſelf all the Silver in form of a white Pouder ; but which way ſoever you make this precipitation of Silver, you muſt afterwards by ſeveral reiterated Lotions, edulcorate the Pouder or Calx of Silver with common Water, and then dry the ſame. But becauſe this Calx is not yet free from ſome mixture, it is neceſſary to Cupel it, and drive it with three or four times as much of Lead upon the ſaid Cupel, being covered with a piece of Wood dry, and adapted to the proportion of the hollow, with good Coals fitted about, and blown with a great quickneſs and violence of fire, till the Lead vaniſhing hath carried away in its vapouring all the impurities and heterogeneous metallick mixture of the Silver, or that the Lead be all drunk up by the Cupel, or converted on the top of it in a skum or excrement of calcined Lead, which is commonly called *Litharg*, more or leſs red and high in colour, according as it hath more or leſs participated of the heat of the fire. The moſt remarkable thing in this Operation is, that the Silver being once refined and purified, it grows hard in the midſt of the moſt violent fire, though a little before it did run like Water, whilſt the Lead was yet Maſter over it, and ſome mixture of impurity did remain.

The Silver thus left upon the Cupel is very pure, and cannot be ſuſpected to be guilty of any bad mixture; this is that which Artiſts call *highly Refined*, and *Silver of Cupel*: Take then of this q. ſ. and having made it into very thin Plates or ſmall Filings, put in a Matraſs, and pour it upon three times its weight of good *Aqua Fortis*, or what would yet be better, of good Spirit of Niter, put it in Sand or Aſhes to digeſt and accelerate the diſſolution; and being ended, decant it in a ſmall Cucurbit, to ſeparate what impurities might remain in the bottom of the Matraſs; after this draw off half of the Menſtruum again in Aſhes, and let the Veſſel cool, and the next morning ſhall you find your Silver reduced into Chryſtals, which according to ſome are called the *Vitriol of Silver*; theſe dry gently, and keep in a well ſtopt Viol, to adminiſter to ſuch as are ſick with ſome Cephalick Diſeaſe, to purge them. The Doſis muſt be from ij *gr.* to x, in Broth, or ſome opening Cephalick Decoction; they purge very gently, and do powerfully disburthen the head of all bad and noxious humours.

After this precipitate the Liquor which ſwam above the Chryſtals with Salt Water, to have the Calx of *Lune* or Silver; which edulcorate and dry, to make therewith the following Preparations: And this is that which Writers call *Calcined Silver*, or *Calx of Lune*. We will give three Examples of the Extraction of Tincture of Silver, which is called *Potable Lune*, or *Silver*, to make the Artiſt the better to apprehend the manner of working, becauſe the Menſtruums, as alſo the manner of the work, are differing one from the other.

The firſt Preparation of the Tincture of Lune.

TO attain to the perfection of this Tincture, there muſt firſt a Menſtruum be prepared for its Extraction, which is to be made in this following manner. Take j p. of very pure *Armoniack* Salt, and ij p. of *Minium*, which is nothing elſe but calcinated Lead, and turned to redneſs by Reverberation; having mixt theſe two ſubſtances together, put them in a Retort in Sand; and having fitted to it, and luted exactly a Recipient, give it fire by degrees, which continue until the drops and Vapours be over: But take care that the neck of your Retort be above an inch diameter in breadth, that in caſe any ſublimation happens, the matter may have a free paſſage into the Recipient, and not ſtop the neck of the Retort to the danger of its breaking: the Veſſel being cooled, pour the diſtilled Liquor into a Cucurbit, and rectifie this Spirit in Aſhes, to reduce it to a greater purity; After this, take ſome part of the Calx of Lime made with Spirit of Niter, precipitated with Salt-Water, edulcorated and dryed; put it in a circulatory or digeſting Veſſel, pouring upon it vj p. of the above-ſaid Spirit, and digeſt it in a vaporous Balneo with a ſlow heat, and you ſhall ſee in a ſhort time this Spirit to become tinged with a fair blew; which being ſomewhat high in colour, decant it, and put new in the place, and ſo continue until the Menſtruum takes no more colour; then put all the Tinctures together and filtrate them, and draw off the ſaid Menſtruum again to a dry bottom, and you ſhall have in the bottom of the Veſſel a Pouder of the ſmell of Urine; upon which pour diſtilled Rain Water three fingers high, and draw it off again by diſtillation; and thus proceed with new diſtilled Rain Water, until the Lunar Pouder hath totally loſt her ill ſmell, and the ill-ſavouring taſte of Urine which the *Armoniack* Salt had raiſed in it; and the Pouder being thus prepared and well dryed, put it in a circulatory Veſſel, and pour upon it very well alkoholizate Spirit of Wine three inches high; ſtop the Veſſel very exactly, and place it in a vaporous Balneo to extract and circulate, until it hath got a very high blew colour; then ceaſe the fire, filtrate the Tincture, and draw off half the Menſtruum in Balneo, keeping the remainder very choicely; for it is the true Eſſence of Silver, very excellent againſt all affections of the Brain, particularly againſt madneſs or Maniacal Paſſion, Apoplexy, Epilepſie and Palſie; given from j drop, to vj, vij, or viij, in convenient Liquors, as are the Spirit of Black Cherries, or of Elder-Berries.

The ſecond Preparation of the Tincture of Lune.

THE proceſs of the Tincture is much more philoſophical then the foregoing, which muſt oblige the Artiſt to ſtick cloſe to his work,and proceed in it judiciouſly; and as we have ſpoken above of the Cementatory Calcination of Silver, ſo have we deferred to teach here the beſt method of that Operation, as we will keep the Amalgamatory for the ſubſequent.

℞ Silver of Cupel, and having beaten it into very thin Plates, put them in a Crucible or Cementing Box, ſtratified with very dry vitriolated Tartar, prepared with very pure Salt of Tartar, and well rectified Oil of Vitriol, beginning your ſtratification by the Salt, and ending ſo the laſt bed or lay; lute the Crucible or Box, and let the Lute dry; then place the Veſſel in a circular fire, begun ſlowly,and thus continued during the ſpace of four hours; which being over,let the Crucible grow cold,then open it to take the Silver which you ſhall find calcinated and brickle, of a Glaſs colour; reduce it to Pouder, and if any remains which is not yet ſufficiently calcin'd, reiterate the Cementation with new, and joyn all together. Put this green Pouder in a Cucurbit, pouring upon it good diſtilled Vinegar the height of three fingers; then place the Veſſel in Aſhes to a moderate heat, and ſo leave it viij or x dayes in this tenor of heat continually, that it may diſſolve and extract the Tincture of Silver; and when the Spirit of Vinegar ſhall be tinged with a fine Emerald green, ſeparate it, and pour on new, until this Spirit takes no more of the green colour; then put all the Tinctures together and filtrate them. You ſhall find in the bottom of the Veſſel a yellowiſh ſediment, which is the remainder of the Silver, and its earth diveſted of Sulphur.

Put all the Extractions filtrated in a Cucurbit in *B. M.* and draw off the Menſtruum thereof by Diſtillation in a graduate heat, till it comes to a pretty thick conſiſtency of Syrup, upon which pour Spirit of Wine, twice rectified, upon Salt of Tartar four fingers high; cover the Cucurbit with its Blind-head, and put the matters to circulate in a vaporous Balneo in Saw-duſt, regulating the heat thereof as near as it is poſſible to the proportion of the humane Body, or mans Stomach, during the ſpace of forty natural dayes, which is the Philoſophical Month; then take out the Veſſel, and if you find any defecation made in the bottom, decant or ſeparate the impurity by inclination, or filtrate the Spirit of Wine loaden and impregnated with the centrical ſulphur of *Lune*, which is of a very pleaſant green colour; put the filtration in a Cucurbit in Balneo, and draw off back again the two thirds or three parts of the Spirit, and you ſhall have the txue Elixir of *Lune* in a green Liquor, which keep in a well ſtopt Viol for uſe. The Vertues of it are alike, or rather more excellent and more in number then thoſe of the foregoing eſſence; for it is a rare Remedy to evacuate inſenſibly dropſical ſwellings. The Doſis is from j drop to viij, in Broth, Cephalick and Operative Waters, or even in white-Wine.

The third Preparation of Lunar Tincture.

WEE have received in this third Tincture, to give a place to the deſcription of the Amalgamatory Calcination of Silver, for avoiding of unneceſſary repetitions, and that alſo the Artiſt may better conceive under one Tenor the Operation of this laſt proceſs upon *Lune*. Take then very fine Silver in Leaves, and heat it moderately in a Crucible on burning or kindled Coals, having then as much weight, as the Silver, is of running Mercury in another Crucible, which heat alſo, until it begins to ſmoak, then joyn both theſe together, and ſtir them well until they be reduced to a well incorporated Amalgame, and ſomething unctuous; to which add a fourth part of its weight of well deſiccated common Salt, and having put it in the Crucible again, give it a gradual circulatory fire, encreaſing it by little and little until all the Mercury be vapoured away; then the Crucible being cold, grind the matter remaining in it on a Marble ſtone, and waſh it with diſtilled Rain-Water to ſeparate the ſaltneſs thereof, and dry the Calx remaining after Lotion; weigh and put it in a Matraſs, and pour on it three times its weight of Spirit of Niter, digeſting them together to a full diſſolution; then pour this Liquor into a ſmall Cucurbit, and draw off the Menſtruum again in Aſhes to a dry bottom: then pour on it diſtilled Rain-Water, and draw it off again by diſtillation, and thus reiterate with new Water, until the Calx of *Lune* hath altogether loſt that acrimony which it had contracted by its Diſſolvent: that done, and the Calx being very dry, put it in a Matraſs, and pour upon it Spirit of *Venus* or Copper four fingers high, and put it to digeſt and extract in Aſhes in a ſlow heat; and note, that your Matraſs muſt be ſtopt with a Blind-head, and well luted by reaſon of the nimbleneſs and ſubtilty of the Spirit; let it thus remain in digeſtion the ſpace of fifteen dayes without diſcontinuing the heat; then filtrate the Tincture which will be blew, and go on in its digeſtion and extraction until the Menſtruum takes no more of the colour, and all the Tinctures being drawn and filtrated put them in *B. M.* in a Cucurbit, to draw off again the Menſtruum to the conſiſtency of a thick Syrup, upon which pour of the Spirit of Wine acuated with the ſixteenth part of its weight of volatile Salt of Urine, and put a Blind-head upon your Cucurbit; and having luted it very exactly, place it in a vaporous Bath, and give it a very ſlow and moderate heat during the ſpace of three weeks; and the Spirit will take a very pleaſant blew colour, by the extraction it makes of the centrinal Sulphur of ***Lune***; this done, filtrate the Tincture, in caſe any impurity hath gathered to a head; then draw off again the two thirds of the Menſtruum in *B. M.* in a very gentle heat, and there will remain a true Antiepileptical Eſſence, and the true Specifick againſt all maladies of the Brain, by us already related. The Doſis muſt be from j drop, to viij and x, in the Flower of Lime-tree-Water, or an Emulſion made with the ſame Water, and Piony-ſeeds, or ſome other Vehicle appropriated to the Diſeaſe, and taſte of the Patient.

Of Iron, and its Chymical Preparation.

IRON is one of the two Metals of the ſecond Claſſis, which is that of the leſs noble and moſt hard of Metals. It is compounded of Mercury and Sulphur, the crudeſt and leaſt fuſible of all; or again, if you will, Iron is compounded of Mercury, Sulphur and Salt, which are mixt with many terreſtrial and crude parts; in a word, no Metal abounds more in Vitriol then Iron or *Mars* doth, ſo named, by reaſon of the analogy it hath with that Planet, as we already have ſaid above: Iron or *Mars* is one of the Metals which ſupplies with more Remedies the Shop of our Chymical Artiſt, and one of thoſe that produces the moſt effects and moſt pathetical. We will deliver here the method of preparing the moſt uſeful for the health of poor Patients, and the moſt neceſſary for the inſtruction of Artiſts: ſuch as are firſt, the Gradatory Perfectibility (if I may ſo ſpeak) which purifies Iron of all its impurities, and changes it into that ſubſtance we call Steel, which to ſpeak properly, is nothing elſe but a well compacted and cloſe well depurated Iron. Secondly, We will Calcine it to prepare therewith the *Crocus Martis*, both aſtringent and aperitive. Thirdly, We will diſſolve it, to make thereof Vitriol, Syrup and Salt. Fourthly, We will make the extraction thereof, which ſhall afford us the Aſtringent and Aperitive Tincture. And in the fifth and laſt place, we will deliver the manner of preparing the Chryſtals of *Mars*, impregnated with the internal ſoul of Steel, which ſhall appear by the red colour of its Sulphur, whereof theſe Chryſtals do participate.

How Iron ought to be purg'd, and made cloſer, to be turned into Steel.

TAke Bars or Rods of Iron hammered and reduced to the bigneſs of the middle finger, and ſtratifie them in a fitting Veſſel with a courſe Pouder made with j. p. of Beech or Willow-coals, and ij p. of Ox-horn ſcrap'd, the joynts of the cover of the Veſſel being well luted, and the Veſſel put in a Wind-Furnace made for the purpoſe, wherein you ſhall give a circular fire with good Coals the ſpace of five or ſix hours; and all being cooled, take off your Iron which you ſhall find purer, cloſer and more compacted; the volatile Salt and oylineſs of the Horn having penetrated the Bars of Iron, and very much corrected and ſweetned it; inſomuch as it is leſs porous and earthy, it is alſo more ductile and malleable before the Water be given unto it, and much harder, and fit to cut after it has received the Water: but as it doth not conduce to our preſent purpoſe, it will ſuffice us to ſay, that ſince Steel is purer and more refined then plain Iron, that it is conſequently Steel muſt be taken by our Artiſt to ſerve his Chymical Operations therewith. They that will uſe Filings, let them take of thoſe which are found ready to hand at the Needle-makers, in caſe they be in a place where they can conveniently get it, otherwiſe let them take of the pureſt and beſt Steel they ſhall meet with, and file it into very ſmall duſt. We have brought here this Operation to no other end then to ſhew our Artiſt, that the volatile Salts ever exalt and advance to a better quality the ſubjects on which they are employed, that he may the more entertain a due eſteem of them, and repoſe in them his chief truſt and confidence, rather then in any other Remedies.

To Prepare the Aſtringent Crocus Martis.

WEE will deliver two wayes of preparing this *Crocus*, the one by Reverberation for the inward parts, and the other by Diſſolution for outward applications. For the firſt, Take equal parts of filings of

Steel and common Salt, and grind them on a Marble-ſtone together, until they be well mingled and incorporated; then ſpread this matter on a Tile to dry, having ſome edge in the ſides to hinder the matter falling, and place it a Reverberatory Furnace, and give it a flaming fire which may gently touch, and as it were, only lick over the matter during the ſpace of xxx hours; which being over, waſh the ſo reverberated matter with diſtilled Rain-Water, and dry it, to put it a ſecond time to the Reverberatory, that it may be more ſubtilitated and open, until the filing or Steel-duſt be changed into a high aad red aſtringent Pouder, which is that Chymiſts do call *Crocus* or *Saffron of Mars*, having given this name to ſuch preparations of Metals and Minerals that are reduced into a red Pouder, by Diſtillation or Reverberation. This *Crocus* being well opened by the action of fire, grind it on a Porphyry-ſtone with Water of Plantain Juyce, or Ladies-Mantle-Water, until it be reduced to an Alkohol; and then put it in ſmall Trochisks on Paper to dry cleanly, and ſo keep for uſe. This *Crocus Martis* is inwardly uſed, where there is need of an aſtringent deſiccative Remedy; as in Dyſentery, Lientery, heat of Urine, Gonorrhæa, and ſpitting of Blood. The Doſis muſt be from iv *gr.* to ʒ ß, in Conſerve of Roſes in Bolus, or preſerved Comfrey-Root, or Decoction of Plantain, Golden-Rod, or Ladies-mantle, a little of Syrup of dryed Roſes, or a little of that of Berberries.

As for the ſecond kind of *Crocus* which is Aſtringent, and to be employed to outward uſes, it is made with any kind of acid or corroſive Liquor, as the common *Aqua Fortis*, Spirit of Nitre, Salt, Vitriol, Allom, and Armoniack Salt; we will only take for our Model here, *Aqua Fortis* made with equal parts of Allom and Vitriol, in which the filings of Steel muſt be diſſolved, of which take ℥ iv, and pour it by ʒ ß at once, in ℔ j of this *Aqua Fortis*; for if the Menſtruum was poured upon the filings, there would ſuch an ebullition be made, and ſo ſudden a calefaction of the Matter and Veſſel, that either the one would be waſted, or the other break; and if alſo too much filings were put at once in the Menſtruum, it would ſend up ſudden and noxious Vapours, which would cauſe a ſuffocation of Breaſt, or ſtopping of breath to the Artiſt; wherefore the Menſtruum muſt be put into a Cucurbit ſomewhat high, that nothing may be loſt by ebullition, which it is altogether impoſſible to hinder or prevent by any other means, then pouring a little filings at once; ℥ iv of filings being all ſpent and put in by the Artiſt, if the Menſtruum be not altogether ſpent and drunk up, he may put as much filings more as it can bear, and he thinks fitting; for it muſt be made ſo thick, as that the

Menſtruum and Filings make but one Paſte of an indifferent conſiſtency, which put in a Matraſs, having ſomething a broad and large neck; and being placed on a round plate of Earth, or a piece of Brick with a little Lute, you ſhall give it a circular fire, by degrees, to exhale the Menſtruum; then encreaſe it, until the Matraſs becomes red on all ſides, and being cooled, you ſhall find in it an aſtringent *Crocus* of *Mars*, of a high red, very uſeful and excellent for outward Applications, *viz.* to dry Wounds and Ulcers, and ſtop Hemorrhagy; it is of this *Crocus* that Chyrurgeons muſt alwayes make uſe in Salves and Liniments. We have this more nevertheleſs to ſay of it, that if the Artiſt puts only ℥ j of filings of Steel upon ℥ vj of *Aqua Fortis*, and evaporate it in a Matraſs in Sand to a dry bottom, he will have a *Crocus* eaſily diſſoluble of it ſelf, being put in a Cellar, or ſome other moiſt and cold place, into a red Liquor, which is a ſoveraign Remedy to mundifie rotten, corroding and running Ulcers; as alſo thoſe which have contracted a Callus or ſoreneſs in the brim, and abound with ſuperfluities of ſpongious and corrupted fleſh; for it conſumes all preternatural excreſcencies by the activity of the Spirits and Salts which are diſſolved, and renders the Ulcer capable of cicatrization, by the aſtringent Faculty of its vitriolick Earth.

How the Crocus Martis *aperitive is to be prepared.*

WEE will deliver two manners of preparing this aperitive *Crocus* of *Mars*, as we have ſhewed two for the aſtringent *Crocus*. The firſt manner is by taking ℔ j of filings, or duſt of Needles very clean, which put in a ſtone earthen Pan very flat; then by degrees, and gently moiſten it with Dew-Water, if your work falls in *May*, elſe Rain-Water of the vernal Equinox, until the filings begin to crumble, at which ſign proceed no further, leſt you ſhould drown your matter; for when it is onely moiſtened in the form of a Paſte or Crums, it ferments and grows hot of it ſelf with Water, as by the touch and ſmell it may eaſily be noted: for there is a certain ſaline Spirit hidden in theſe Waters which penetrates the Steel, and inſenſibly diſſolves it; wherefore it muſt immediately be dryed in the Sun, and being dry, grinded on a Marble, and ſo moiſtned again without drowning, and in leſs then three or four dayes all the filings will be converted into a black Pouder, which will begin to draw to a violet purple colour in the ſuperficies, and by a ſmall taſte of Ink, or ſomewhat vitriolick, ſheweth, that the Water begins to make the reincrudation of the Metal into his ſeminal Principles, which are Sulphur and Vitriol; for when the Water is put upon it, it ſends forth a ſulphureous odour, and the taſte doth manifeſtly declare and diſcover the Vitriol. Note, that your matter muſt be grinded on the Marble as often as you dry it; and if you will diſcharge the part of a careful Artiſt, you may make three exſiccations every day, and end the Operation in three weeks, otherwiſe you muſt beſtow at leaſt a month or ſix weeks, before the body of this Metal may be reduced to an impalpable Pouder, which is coloured with a brown purple Violet; which having got, put it in a crude Iron Pot or Caldron, and upon open fire reverberate, ſtirring it ſtill with a Rod or Slice of Iron, and as ſoon as it begins to grow red, take it away, and you ſhall have the aperitive reverberated *Crocus* of *Mars* in a fair red brown colour. But it is much better not to reverberate it, becauſe this heat may cauſe the Vitriol that begun to be framed in the *Crocus*, to exhale away, and this vitriolick Salt onely conſtitutes its aperitive vertue. The Doſis of this *Crocus* muſt be from iij *gr.* to xx and xxx, provided it be given by degrees, and the ſtomach uſed to it by little and little; it is adminiſtred in Opiats and Conſerves, or mixt amongſt Aromatical Pouders; it muſt be taken faſting, or the Stomach being empty, three or four hours before meals, and the Patient muſt walk after in ſome ſmooth and pleaſant place; after the walk, take a Broth of Veal and Chicken made with Parſley and Spaniſh Scorzonera Roots. This Remedy is uſeful for all Chronical Diſeaſes, Cachexy, Leucophlegmacy, and all other Diſeaſes proceeding from ſplenetical obſtructions, or obſtructions of the Liver, Meſentery and Pancreas; but there are alſo ſome other Martial Remedies more quick and efficacious in their Operation, as we will ſhew hereafter.

The ſecond manner of preparing the opening *Crocus Martis*, is this. Take a Bar of good Steel, and make it glowing in a Smiths Forge, in that degree of heat which they call *ſodering heat*, which is a kind of half-fuſion; and being thus, have a great Pan full of Water, over which you ſhall hold your Steel, and apply cloſe to it a Cake of Brimſtone, which will melt the Steel, and drop by drop precipitate it in the Water in ſmall grains; continue this work until you have a ſufficient quantity of the Steel in grain, which muſt be ſeparated from the Brimſtone that fell dropping along with the Steel in the Water; then beat it in an Iron Morter to Pouder, which muſt be run through a delicate Sive or Tamy, then prepared on a Porphyry-ſtone, or Sea-ſhell, with ſome opening Water, until it be reduced to an Alkohol, the half whereof muſt be framed into Trochisks, then dryed, and ſo kept; this is called *prepared Steel.* Then take the other half, and reverberate it in an Iron Cauldron with naked fire, as we have ſaid above, until it hath attained a red purple colour, without fear of conſuming the Vitriolick Faculty; but contrariwiſe, it will open more and more, this Preparation being different from that of the foregoing *Crocus.* The Doſis is the ſame with the other, the Precautions the ſame, and the uſe of it for the ſame Diſeaſes; ſome there are that even do prefer it to the other Preparations, but I am of a contrary mind.

How the Vitriol of Mars *is to be prepared.*

TAke filings or duſt of Needles very clean, and put it in a Glaſs Cucurbit, pouring by degrees upon it acid or ſharp Spirit of Vitriol, not altogether deprived of its Phlegm; ſtir both together with an Iron Slice, pouring as much of it as that the matter may be well imbib'd and ſatiated therewith, and have a ſpecial care not to break the Cucurbit, and immediately pour upon diſtilled Rain-Water, or Rain-Water taken up in the Equinox without diſtilling, which may be almoſt boyling hot, to the height of four fingers; place the Cucurbit in Sand already heated, and there leave it in digeſtion and diſſolution the ſpace of xij hours; which done, filtrate the warm Liquor, and put it to evaporate gently to the conſumption of one half in the vapour of a boyling Balneo, and then place it in a cold Room to ſhute Chryſtals, which you ſhall find the next morning bright and green round about the Veſſel, which put between two Papers, and dry in a ſlow and gentle heat; and if you deſire a greater quantity, purſue the ſame work upon the remaining duſt or filings with the Spirit of Vitriol; then with warm Water filtrate, evaporate and chryſtallize until the whole body of the Metal be converted into Vitriol, or a little of earthly ſediment remains, if the filings were pure: But the quantity of your Vitriol will go much beyond the weight of the filings, exceeding ſometimes even to a third part: by which the Artiſt may be taught that it is but a Recorporification of Vitriol, having reſumed his Vitriolick Idea and Character by the help of *Mars,* as being a body which was once Vitriol: But we muſt confeſs, that this Vitriol ſurpaſſes much in excellency the common Vitriol, out of which the Spirit uſed in this work hath been diſtilled; for the recorporified Spirits have a great ſphere of activity, and do much more powerfully work, then the matters purely and meerly naturally. The Vitriol hath more efficacy, and acts with much more quickneſs then the aperitive *Crocus*, in all the Diſeaſes which we have before mentioned; but the Doſis is much leſs, for it is given, beginning with one *gr.* and ſo continuing by degrees till you come to viij, x, and xij *gr.* either in Bolus in ſome Preſerve, or in Broth. But you muſt note, that the uſe of Remedies extracted from the *Mars*, muſt be long continued and taken ſtill, encreaſing from j *gr.* to ij, until at laſt it begins to raiſe and provoke the Stomach, and cauſe a nauſeouſneſs; then go back from ij *gr.* or ſomewhat more, becauſe it appears that Nature is then in the right time of bringing the Remedy to a deſired ſucceſs, without much violence, if it be not encreaſed: You muſt note beſides, that thoſe that uſe Steel Remedies, ought to be purged every fourth day, in caſe the Remedy it ſelf doth not provoke Nature, and every other day the Belly muſt be opened by a Glyſter of pure new made Stale: for as the Steel hath a diſſopilating and opening Vitriol, ſo hath it likewiſe a conſtipating and drying Earth; wherefore every fourth or fifth day, infuſe ʒ ij of Senna, with ℈ j Vitriolated Tartar, in Veal or Chicken Broth, to carry away, and drive out of the Body thoſe matters which the Remedy hath made fit for evacuation. Thoſe that deſire to have a very fine and uſeful *Crocus Martis*, muſt calcine ℥ iv of this Vitriol of Mars in a Crucible with open fire, until it be converted into a fair ſubtil red Pouder, having no ill or unſavory taſte, and fit to be given to the moſt delicate Palats, in Bolus, Lozenges, or Opiates, from v *gr.* to xxx, with the ſame Obſervations and Precautions as are hinted above.

To make the Extract or Syrup of Mars.

℞ ℔ ß of filings of Needles very pure and clean, mix it with ℔ ij of good white Tartar of *Montpellier* reduced to ſubtil Pouder; then fill up the third part of ſome Iron Cauldron of reaſonable bigneſs with Water, and put it on a bare fire, but your Water muſt be Dew-Water, or Water taken up in the vernal Equinox, or diſtilled Rain-Water; make it boyl; and when it is thus ready, pour into it gently and by degrees the Steel and Tartar mixt together, not above ℥ j at once, by reaſon of the ebullition and working up, which happens in the diſſolution of the matter at firſt; then all being put in the Veſſel, ſtir it continually in the bottom with an Iron Ladle, to raiſe up in the uppermoſt part of the Water amongſt the Walms, that which would otherwiſe ſettle in the bottom, and by this means haſten and eaſe the diſſolution thereof: you muſt alſo keep in a Pot by it ſelf upon the fire, ſome of the Water, like unto that wherewith the diſſolution is made, that it may be reſtored warm in the place of the other, that the action of the fire cauſes to evaporate away; which muſt be repaired from time to time, leſt the Tartar ſhould too much coagulate, by want of moiſture, or burn in the bottom, or about the Veſſel: and moreover, have a care that the Menſtruum may be in ſufficient quantity to diſſolve well the Tartar, which by its acidity doth work upon the *Mars*, and diſſolves it; keep the fire going ſtill, ſtirring and renewing with new Water, until the Artiſt ſees that the Liquor contained in the Pot or Cauldron be quite altered, and become thick, and of the colour of a whitiſh gray, having brown and blackiſh Veins about it; and moreover, the matter gathers a ſmell and odour as of Sulphur of *Mars*, which is ſomething unpleaſant and nauſeous; but the laſt and moſt concluding ſign of the end and perfection of the Operation, and the diſſolution of the Steel, is the taſte; for filtrating ſome ſmall quantity of the Liquor, when the above-mentioned begin to appear, if the Liquor be of a brown red colour, and hath a taſte of Ink and Vitriol, between acid and bitter; then muſt you fill up wholly the Veſſel with boyling Water; and filtrate it, being yet warm, putting the ſame, as it is filtrated, in another Iron Veſſel, wherein you cauſe it gently, and without boyling, to evaporate away; and thus go on filtrating and evaporating, until the Liquor be reduced to the conſiſtency of a Syrup or half Extract, which you may know when a thin skin ſhall riſe above the evaporating Liquor; then draw the Veſſel off from the fire, and your matter being cooled, put it in a white earthen Pot to keep for the time of uſe. It will not be very difficult to perſwade the leſs knowing, that Extract or Syrup, is one of the beſt Remedies produced by the Art of Chymiſtry; for it is known to all, that Tartar is a friendly Salt to our Nature, and of it ſelf a great opener and diſopilative Remedy; there are alſo very few but know, that Phyſitians have in all Ages made uſe both of crude and prepared Steel, or its Crocus, to open Obſtructions, and for the cure of chronical and obſtinate Diſeaſes, which have ſeated in the Region of the Ventricle, Liver, Spleen, and other adjacent parts: But I can very ſincerely ſay, that all what we have delivered above, muſt give way to this Martial Extract; for after that Tartar is once intimately united to the *Mars*, and that both have acted and re-acted one upon another in ſuch a manner, that the one hath loſt its great acidity, and the other its metallick corporeity, as it hath happened in this Operation; a third ſubſtance reſults from thence endowed with all neceſſary qualifications, to act according to the intent of the Phyſitian, *Cito, tuto, jucunde :* for this admirable Remedy can never be hurtful, but alwayes profitable and good, as we our ſelves have found it by experience, in the cure of many great and dangerous Maladies, made by the due adminiſtration of this noble Medicine; which is given very fortunately, and with a ſurprizing and unconceivable ſucceſs, in the beginning of the ſwellings of Dropſies, againſt the ſchirrous Tumors of the Spleen, againſt all obſtructions of the parts of the inferiour Ventricle, againſt the pains of the Reins and Bladder, againſt the evil fermentations of the Stomach, againſt Worms in young and old, the ſeminary whereof it doth radically extirpate; againſt intermittent Feavers, chiefly thoſe which Phyſitians call *Stomach Feavers* ; and to be ſhort, generally againſt all coagulations of tartarcus matters in whatſoever part of the Body ſeated. The Doſis is from v drops to lx, in Broth, aperitive Decoctions, or ſpecifick Waters, appropriated to the moſt apparent and predominanting Diſeaſe.

To prepare the Salt of Mars.

℞ ℔ ß of filings of Steel, very ſmall and clean, and being put in a ſtone Diſh or Pan, ſprinkle them with very good diſtilled Vinegar, until it is become a Paſte, which dry after to the ſteam or vapour of *B. M.* and when it ſhall be ſufficiently dry, grind it upon Marble, and moiſten it again with the ſame Vinegar; then dry, grind and moiſten again ſo often, as you may at laſt diſcern by the taſte in your matter a ſweetiſh taſte, predominating in the body of your *Mars*; then put this Pouder in a Cucurbit, and pour upon it Phlegm of Vinegar half a foot high, and place the Cucurbit in Sand, and cauſe the Liquor therein to boyl, that the extraction of your Salt of *Mars* may be the better perfected; but have a care to put ſtill new warm Phlegm of Vinegar in the place of that which in the boyling vapours away; and when you ſee your Menſtruum ſufficiently impregnated, filtrate it, being cold, that it may come away the purer; the filtrated Liquor put in *B. M.* and draw off ij or iij p. of the Liquor in the heat thereof; then place your Cucurbit in a cold place or Cellar to make the Salt ſhute into Chryſtals; ſeparate the Liquor ſwimming over the Chryſtals; then evaporate again, and turn to chryſtallize; and this work continue till it will yeeld no more Chryſtals; then dry them all, and being dry, put in a double or circular Veſſel, and pour upon Alkohol of Wine three fingers high, ſtopping and ſhutting cloſely the joints of the Veſſel; and ſo putting it in a vaporous Balneo, to digeſt with a ſlow heat, during the ſpace of ſeven natural dayes; which being paſt, unſtop the Veſſel, and put a Still-head upon it to draw off the Spirit of Wine in the ſame heat, and in the bottom you will find a Salt of *Mars* very pleaſant,& without compare to remove Obſtructions,chiefly for weak and tender Bodies: It is good, in general, againſt all melancholick affections, and griefs of the Reins and Bladder, but it is particularly dedicated to the relief of dropſical Bodies, and fits or obſtructions of the Mother. The Doſis muſt be from iv *gr.* to xx, in Broth or Decoctions, or appropriated Waters according to the Diſeaſe.

To make the aſtringent Tincture of Mars.

℞ ℥ iv of filings of Needles very pure and clean, and having put them in a Glaſs Cucurbit, pour upon Spirit of *Venus*, or Copper, until they be ſufficiently moiſtned, and begin to cleave together; then cover the Cucurbit with a Still-head, and draw off the Spirit in a ſlow heat in Aſhes to a dry bottom; and if what you have drawn hath any taſte, cohobate it again; if not, moiſten it again with new Spirit of *Venus*, and dry as before; and go on thus doing three times, or until your *Mars* be changed into a very ſubtil and red Crocus; then grind it on a Porphyry-ſtone, and put again in a Cucubit, and pour upon of the ſame Spirit of *Venus* four fingers high; and having adapted to it the double Pan or Blind-head, place it in *B. M.* to extract, until the Spirit be turned very red; then ſeparate the Tincture, and pour again new Menſtruum, and go on thus doing ſo long as it will take colour; this done, put all the Tinctures together and filtrate them; draw off the Spirit of *Venus* in *B. M.* until it hath got the conſiſtency of a thick Syrup, upon which pour Spirit of Wine three fingers high, which digeſt in the Vapour of Balneo,and let it extract; then filtrate and extract with the ſame Menſtruum until no more will come; and having filtrated all the Tinctures, draw off three parts of the Liquor, and you ſhall have an aſtringent Tincture of *Mars* remaining, which is none of the leaſt ſecrets in Phyſick, and worthy the Cloſet of a curious Artiſt. This Tincture is adminiſtred by drops, from iv, to xv and xx, in decoction of Plantain, or Water of the Juice thereof; it may alſo be given in Water ſharpened with Juice of a Pomegranate. It hath the vertue to ſtop all immoderate fluxes of the Belly, to correct and allay the griefs and irritations of the Pylorus or Blind-gut, cure Dyſentery and Lientery, as alſo Red and White Fluxes of Women, and the hemorrhoidal alſo; finally, it dries Gonorrhea, and cures heat of Urine, and ſtops all manner of Hemorrhagy.

To make the aperitive Tincture of Mars.

℞ ℥ ij of Vitriol of *Mars*, prepared in the manner we have taught before; reduce it to Pouder, and mix with it equal weight of Salt of *Mercury* of *Sennertus*, made in Pouder alſo in a Marble Morter, and you ſhall wonder that on a ſudden this wonderful Salt ſhall draw the Soul of *Mars* or his Sulphur, out of the Center of its Vitriol; for although this Salt be white, and the Vitriol likewiſe, it is no unpleaſant ſurpriſal to behold in an inſtant a red to predominate higher in colour then that of the Saffron: this Maſs muſt be ſtirred and agitated, and it will ſoon be reduced to a Pap; then expoſe it to the moiſt Air, that the whole may be reſolved into a Liquor, which is already of it ſelf an aperitive and diſopilative Remedy, which may be given againſt all manner of Obſtructions, and againſt the Coagulation of Tartar in Mans Body, from vj drops, to xv, in Broth, or aperitive Decoctions. But this ſubſtance is yet too courſe, and will ſhew that our Art is capable to bring ſubſtances to the higheſt pitch of their perfection, and the laſt degree of their ſubtilty. To this end weigh the red matter, after it hath been mixed in a Marble Mortar; and note the weight; weigh it alſo after its diſſolution in the Air, to draw off by diſtillation in *B. M.* the weight of the moiſture it hath attracted from the Air, and to pour upon it as much of the Spirit of *Venus* as this moiſture doth weigh; then digeſt them in the Vaporous Bath together, in a digeſting or double Veſſel the ſpace of 24 hours; after which draw off the Spirit with a Still-head, to a conſiſtency of Syrup ſomewhat thick; upon which pour tartarized Spirit of Wine four fingers high, then cloſe up the Veſſel with a Blind-head, and digeſt it three natural dayes; at the end whereof filtrate the Tincture cold, and draw off the half or two parts of the Menſtruum in Balneo in a ſlow heat, and ſo ſhall you have one of the nobleſt Remedies which the matter, helpt by Art, can ever bring to paſs, as much for his vertue, as for his pleaſantneſs of taſte. This noble Tincture doth eat up and reſolve all manner of tartarouſneſs in Mans Body, which whereſoever it coagulates, is the ſpring and cauſe of all Obſtructions: wherefore it may ſecurely be adminiſtred in all the Maladies, where it is neceſſary to open and expel ſuperfluities. But the moſt wonderful thing of all is, that it hath or bears no weight upon the

Stomach, as for the moſt part are all the Remedies taken from *Mars*; contrariwiſe, it ſtrengthens the Ventricle, and purifies it from the coagulated clammy humors and viſcoſities, which for the moſt part cauſe the loſs of appetite; it is moreover a great Antiſcorbutick, becauſe it disburthens the Spleen, purifies the maſs of the blood of thoſe groſs and earthly impurities, whereby all the evil accidents of this pernicious Diſeaſe are occaſioned. The Doſis muſt be from v drops, to xx and xxx, in appropriated Liquors, ſo many times mentioned by us above.

How the Red Chryſtals of Mars *are to be prepared.*

MAke firſt a very good *Aqua Fortis* with equal parts of Vitriol and Salt-peter; the deſcription whereof we ſhall give in the Chapter of *Salts*. Of this ℞ ℔ j, and therein diſſolve ℥ iv of very pure and dry Salt-peter; then put ℥ vj of Steel in whole pieces as big as the finger, and two inches long, in the bottom of the Cucurbit placed in Aſhes, and having poured the *Aqua Fortis*, let it act and work thereupon; But note, that the Cucurbite muſt be big and capacious, and that it is not without reaſon we preſcribe to put Steel in whole pieces, and not filings; for the Veſſel would too ſuddenly contract a heat, and cauſe too ſudden an ebullition, what care and precaution ſoever could be taken by the Artiſt; but when it is in body, the Menſtruum or diſſolving Spirit cannot penetrate it, neither work upon it but gently and by meaſure. We thus alter the manner of our Work and Proceſſes, the better to prepare the judgement of the Artiſt againſt ſuch accidents which may happen in the working: to haſten the diſſolution, give a ſlow heat to the Aſhes; and when all the action of the Diſſolvent or Menſtruum is paſt over, pour in the Cucurbit ℔ ij ß of good diſtilled Vinegar ſomewhat warm; but you muſt pour it in gently, and ſoftly ſtir the matter in the bottom; but if by chance ſome ſmall piece of the Steel was found left there, take it away before you pour the Vinegar; digeſt this Solution 3 continual dayes in *B. M.* and it will become very red; then filtrate through a Paper & evaporate in *B. M.* to draw off the two parts of the Menſtruum by diſtillation; and placing the Cucurbit in a cold place, it will ſhute into Red Chryſtals, having yet in them ſome kind of impurity; put them together aſide, and evaporate the remaining Liquor, to draw off from it what may turn again into Chryſtals; then put all the Chryſtals together, and diſſolve them in a ſufficient quantity of diſtilled Vinegar; filtrate the Solution,

tion, and draw half of the Menſtruum in the ſlow heat of *B.M.* then put it in a cold place to ſhute into Chryſtals; and ſo go on in diſſolving, filtrating, diſtilling and chryſtallizing until your Chryſtals be very fair, red and tranſparent, and that no more feces or ſeparation of impurities will ſettle in the bottom of the Veſſel where the chryſtallization is made; dry the Chryſtals in a ſlow heat between two Papers, and put them in a Glaſs Viol to keep for uſe. This Salt is a very ſubtil and pleaſant Aperitive, which is adminiſtred in Broths or Apozema's, or even may be given as a true Martial Tartar, without any danger of the *Aqua Fortis* uſed in the diſſolution; for it is to be known, that all the corroſion of the Spirit of *Aqua Fortis* is blunted and deaded by its own action upon the Steel, as it may be perceived by the pleaſing taſte of the Chryſtals reſulting thereof. The Doſis muſt be from vj *gr.* to xx and xxx; and if the Artiſt be curious, he may take ʒ ij of Chryſtals, and as much of very fair Armoniack Salt, and grind and mix them together; and being put in a luted Matraſs, place it in Sand, ſo as it may lie but a fingers breadth from the Iron Veſſel containing the Sand; then by a gradual fire, drive it ſo high that the Armoniack Salt may ſublimate and carry along with it ſelf the Sulphur of *Mars*, and ſo ſhall he have Flowers very red and efficacious for a Diaphoretick and Diuretical Remedy againſt intermittent Agues, and chiefly againſt Tertians and Quartans; and if you have ſublimated of theſe Flowers in any conſiderable quantity, you may diſſolve one part thereof in warm Water, to ſeparate the Salt from it by edulcoration and lotion, and you ſhall have the true Sulphur of *Mars* in its perfection, which you may uſe as a ſoveraign Diaphoretick. The Doſis of the Flowers is from ij *gr.* to x or xij; and of the Sulphur, from j *gr.* to vj, in Bolus or convenient Liquors.

Of Copper, and its Chymical Preparation.

Copper is the ſecond of the leſs noble of the hard Metals of the ſecond Claſſis; it is acording to *Paracelſus* compounded of a purple Sulphur, red Salt, and yellow Mercury. But as we have ſaid of Iron, ſo may we of Copper, that it hath much Vitriol in it ſelf, and leſs of Earth then Iron, and by conſequence leſs impurity. It is amongſt Chymiſts called *Venus* ♀, becauſe it receives the influences of that Planet, and relates to the parts in Man dedicated to Generation. The general vertues of Copper are, to ſtrengthen the ſpermatical and generative parts, both in Male and Female, inſomuch as the Antients, and *Hippocrates* himſelf, and his Succeſſors after him, have had it in great eſteem, and made very frequent uſe of it, though in a rude and courſe way, being not yet aſſiſted with the light of Chymiſtry, which doth from this Metal draw admirable Remedies, and particularly that wonderful Spirit of *Venus*, whereof we have ſpoken above, and whereto we are already come.

We could very well lay down and deliver here all the manners of calcining Copper, either by Diſſolution, Illinition or Cementation; but as all theſe Operations do rather relate to the Metallick then Phyſical part, we will not inſiſt on it to purſue inceſſantly and with leſs intermiſſion, our purpoſe of diſcovering the noble Remedies which Metals do afford us; we will then firſt ſpeak of the Preparation of green Copper or Verdegreaſe, which is more full of myſterie then is commonly imagined, though this Operation be common, and performed onely by the Women and Maids at *Montpellier*.

The Preparation of Green Copper, or Verdegreaſe.

GReen Copper, to ſpeak properly, is nothing elſe but the volatilization of Copper in very ſubtil Vitriol, by the help of Tartar contained in the husks and recrements of the Grape after the Wine is expreſſed and ſqueezed out of it. But this Operation cannot be performed in all places where Wine doth grow, which muſt give a Chymical Artiſt occaſion to reaſon thereupon, and ſeek after the cauſe, in examining the matter which produces this green, which are the Copper and the Cakes of the Husks of Wine. Now all kind of Grape hath its recrement after expreſſion, and yet all expreſſion of Grapes is not capable to reduce the Copper in green, as this is that comes from *Montpellier*, and the adjacent parts, and therefore conſequently there muſt be ſomething in that Grape of *Montpellier* capable to work upon, and extract ſooner then others, the Vitriol of Copper without corroſion, which cannot be done but by the help of a ſubtil and active Tartar, which penetrates the Copper, and changes it into green, and yet this Tartar is undiſcernable and imperceptible in the recrements of the Grape; but after the Copper is ſtratified with this expreſſion, and put in a convenient place, the inward fire, and fermentative Spirit of theſe Cakes of Grapes excites and ſtirs up a heat, which brings it from power to act, and doth volatilize the Tartar contained thereunder, changing it into a ſubtil Spirit, not altogether Wine or Vinous, neither yet become Vinegar, ſo that it doth poſſeſs volatile ſulphureous qualities, and yet hath in its ſelf a Saline, Mercurial and acid Spirit, which acts upon the Copper, and turns it into that ſubſtance we call *green Copper*, being the ground and Baſis of our Spirit of *Venus*. It is not without reaſon we have made this digreſſive Diſcourſe upon *green Copper*, made with the Recrements or Expreſſion of Wine about *Montpellier*, for it altogether differs from that which is made with Vinegar and Copper ſhut up in Barrels; for we know that *Lanquadock* and *Provence* Wine, and chiefly that which grows about *Montpellier*, doth yeeld great ſtore of Tartar very pure, and very excellent both for Phyſical Remedies, and Chymical Operations: Now it is onely the ſubtileſt part of that matter which Nature intends for Tartar, that volatilizes it ſelf, and without any violent corroſion works upon the Copper; for it is rather performed by an amicable and friendly kind of diſſolution: But Vinegar doth operate more violently, and doth not joyn nor unite it ſelf to the ſubſtance of the Copper, as this middle Spirit doth; which truth will be made manifeſt by the extraction thereof, which we will teach, its chryſtallization and diſtillation, by the Diſcourſe we ſhall annex unto it, for the greater inſtruction and ſatisfaction of curious Artiſts, and ſearchers of Nature.

To make the Volatile Vitriol of Venus.

WEE have ſhewed above, that *green Copper* was nothing elſe but an open Copper diſſolved, and as it were, volatiliz'd by the tartarous fermentative Spirit of the Recrements of the expreſſion of Wine; and we have ſaid ſomewhere elſe, when we ſpoke of Vinegar and its diſtillation, that its Spirit was alſo nothing elſe but a kind of ſubtiliated Tartar, ſpirituliz'd and made volatile. This granted, we ſhall eaſily make our Artiſt conceive that the extraction of *green Copper*, which we now are about to teach, is but a ſequel & dependance to bring this Agent and Patient to a more ſubtil volatilization; that after we have converted the *green Copper* into a clear, blew, ſubtil, and as it were already volatile Vitriol; we may afterwards by diſtillation bring it to one of the moſt quick and wonderful Spirits hitherto us'd, either in Phyſick for the cure of Maladies, or in Chymiſtry for the diſſolution of Bodies, and being a mean of uniting and joyning together ſeveral ſubſtances which ſeem altogether to be heterogeneous, aud uncapable of being brought together without the help of this wonderful Spirit, which proceeds from the volatile Vitriol of *green Copper*, which is thus prepared.

Take ℔ iv of good green Copper or Verdegreaſe of *Montpellier*, and being made into a very ſubtil Pouder, put it in a Glaſs Cucurbit, and pour upon it good diſtilled Vinegar ſix inches high; ſtir it often with a wooden Slice, the Cucurbit being placed in Sand, and the Menſtruum being tinged with a very high green; decant it clear of the matter, and pour on again freſh Vinegar, which digeſt and ſtir as before, and decant when it is ſufficiently coloured: this repeat four times, and if the Menſtruum be not much tinged the fourth time, boyl all together in a Copper Cauldron, until it hath extracted and diſſolved what it can get from the remainder of the green Copper: finally, you ſhall thus continue to proceed with new diſtilled Vinegar until all your matter be diſſolved, the utmoſt remainder of which will not extend to above ℥ iv or v of feces and earthly ſediment, which hath no metallick quality at all, except you find it in ſome ſmal pieces of Copper Plates, which by the negligence of thoſe who ſcrape the ſubſtance diſſolved by fermentation do remain in it, but all the remainder is but meer earth.

All theſe Tinctures then muſt be joyned together, and filtrated cold through Paper, and the filtration put to evaporate in an earthen ſtone-Pan, in a ſlow heat in the Vapour of *B. M.* then digeſt again that which after filtration is left in new diſtilled Vinegar, filtrate it, and joyn to the other Tincture, and thus go on until all be run cold through the Filter to a clear Liquor, and as green as *Emerald*; and when you ſhall ſee the evaporating Liquor begin to contract a skin in the upper part, put the Pan wherein it is in a cold place, and let it reſt there until the next day, and you ſhall find in the bottom and ſides of the Veſſel, Chryſtals of fair blew Vitriol; which having put between two Papers, dry in a very ſlow and moderate heat; for the Sun is even capable to deprive this Vitriol from its beſt Spirit, ſo volatile it is; wherefore the Artiſt muſt be very circumſpect and wary in this particular, leſt otherwiſe he be taught to become ſo at his own charge, and by his own experience. And if the laſt Chryſtals, or even the firſt extracted, were not very fair, blew and tranſparent, let them be diſſolved in new diſtilled Vinegar, and let there be no more then the juſt or fitting quantity to diſſolve them cold; let the diſſolution reſt, without ſtirring, twenty four hours, that in caſe there be any Atoms of feculent Matter ſeparated and rais'd in the firſt evaporation, they may ſettle again. The clear Tincture ſhall be very ſoftly drawn off by Decantation, without ſtirring the bottom; and when you come near unto it, filtrate the remainder through Paper; and if there be any conſiderable ſubſtance remaining in the Filter, diſſolve it in new diſtilled Vinegar; then filtrate the Tincture, which joyn with the remainder, and evaporate to half conſumption as gently and ſlowly as you can; then put it to ſhute into Chryſtals, and you ſhall have them in great perfection; dry them with the precaution and care we have already hinted above, and end the reſt of your Operation in the ſame manner likewiſe: All being dry, you ſhall find as much Vitriol as you have diſſolved of green Copper; if you have proceeded exactly and even, you ſhall find more: for all the ſaline, acid, tartarous ſubſtance of the Vinegar, is joyned to the Vitriol, and cauſes even its chryſtallization; for all the evaporating ſteem, though it hath the ſmell of Vinegar, is neverthelesſs altogether inſipid, and hath no more of taſte then Rain-Water, when diſtilled it drops out of the noſe of the Limbeck. So that they which deſire to be yet more accurate and ſucceſsful in their Operation, muſt proceed in their diſſolution of their Chryſtals in new diſtilled Vinegar, until they can diſcover, by trying a diſtillation in *B. M.* or at the moſt in Aſhes, whether the Vinegar aſcending be yet inſipid; which if he find to be ſo, let him go on in the Diſſolution, Filtration, Evaporation and Chryſtallization, until the Vinegar come out with the ſame ſtrength and acidity as it was poured in. This being ſo, you have attained the true point of requiſite perfection which this noble Vitriol muſt be brought unto; then dry it very ſlowly and gently between two Papers, to make the Spirit thereof, as we ſhall immediately teach, after it hath been digeſted three ſeveral times with very good alkaholized Spirit of Wine, three fingers high above it, in a double or digeſting Veſſel the ſpace of 24 hours; and after that this Spirit hath been drawn off every time in *B. M.* to open it more and more, that it may be endowed with thoſe Vertues and Perfections, which do ſhine, and are required in the Spirit drawn from it.

The Diſtillation of the Spirit of Venus.

THis is the Operation wherein a Chymical Artiſt hath need of all his Patience and Judgment, if he will ſucceſsfully perform this intended Diſtillation, which will be to him a Guide and Pattern whereon to proceed in all others, by reaſon of the great volatility of the matter he works upon. Let him then take this Vitriol, when it is very dry, and reduce it to Pouder in a Marble Mortar; then put it in a Retort with a long neck and wide mouth, and all that matter being put in, let him be careful to cleanſe the uppermoſt part of the Retort, and the whole neck, with a Feather tyed to a ſmall ſtick, that he may not be deceived in believing that the greenneſs he ſhall perceive in the diſtilling drops, ſhould have contracted their colour of Vitriol, which might have been left there when it was poured in the Retort. After this he ſhall place his Retort in a cloſe Reverberatory Furnace, leaving four Regiſters on the corners of the roof of the Furnace, and another in the middle, to be able to govern the fire with more command and better moderation; wherefore theſe Regiſters muſt be ſtopt with cloſe and well-fitted ſtoples. Then let him fit a very capacious and large Glaſs Recipient very clean and dry to the neck of the Retort, and ſtop the joyning parts with a wet Bladder, and lute them moreover with Quick-Lime and Whites of Eggs, as we have often repeated in this Treatiſe; and when the Lute is dry, let him begin to give his fire judiciouſly and ſlowly, forbearing all haſtineſs; and farther, expecting with an exemplary patience, that the matter ſhould by degrees drive and ſend up its Vapours, which ſhall thicken and condenſe themſelves in the neck of the Retort, and fall by clear and limpid drops into the Recipient: For the noſe or mouth of the Retort muſt at leaſt advance four fingers deep in the body of the Recipient, that he may diſcern the diverſity of colour of the diſtilling drops; not ſo much to feed and ſatisfie his own curioſity, though it be a very pleaſant diverſion, as to regulate the better his fire, which in this Operation is one of the moſt important conſiderations; becauſe if he never ſo little encreaſes the fire, without neceſſity, it may occaſion the loſs of the whole ſubſtance, and the breaking of the Veſſels; wherefore he muſt be here very vigilant to do nothing whereby he may receive a prejudice, a thing generally to be obſerved in all other diſtillations of Salts, whereof our Artiſt intends to draw the Spirits. We thought fitting to deſcribe this circumſtance of the Work with all imaginable punctuality, that in caſe any, by too much haſte and precipitancy comes to miſcarry, he may not lay the fault upon us. This tenor and ſtate of heat is he to keep ſo long as the drops ſhall fall clear, and not to urge his fire by any means: for the drops will fall faſt enough, if ſlowly you reckon ſix between the interval of every falling drop. But when the drops begin to turn green, and the white Vapours to appear in the Recipient, and condenſe themſelves into Spirit, and in a ſubtil Liquor which frames in the Glaſs Filaments and winding Veins about the ſaid Recipient, it is a token that the volatile Spirit begins to manifeſt it ſelf abundantly, and that you muſt then go on ſlowly, and avoid all precipitancy and over-haſte, for the Recipient grows hot by the heat of the Vapours, and the afflux of the Spirits. The clear drops laſt about four or five hours, the green and firſt volatile Vapours as much. That being over, you muſt begin to encreaſe and urge the fire, and the Recipient will totally fill it ſelf with very white Vapours, which will continue increaſing ſtill the fire more and more the ſpace of five or ſix hours, and towards the end, by the intenſe and vehement action of the fire, yellow drops will fall, which by little and little will turn to a redneſs, which is an abſolute token of the end of the Operation, laſting for the moſt part twelve or fifteen hours, according to the greater or leſſer quantity of matter in the Retort. The Veſſels being grown cold, take off the Lute, joyning the Recipient to the Retort, and pour the yellowiſh Spirit, which hath a ſtrong ſulphureous ſmell, in a Cucurbit; which having placed in *B. M.* and luted exactly a Still-head to it, as alſo the Matraſs, which is to be applyed to the noſe of the Limbeck, give a fire proportionable to the volatility of the matter; for this Spirit riſeth as eaſily and nimbly as Spirit of Wine; but the fire about the end muſt be a little more urg'd, and the whole ſubſtance will aſcend, leaving a dry bottom into a volatile and very penetrating Spirit, poſſeſſing more vertues then can be expreſſed, whether us'd as a bare Remedy, or as a preparation to other Medicaments; this noble Spirit opening and diſſolving Bodies, without corroſion or alteration of their ſeminal powers and faculties, and that which is more ſurprizing, and above all to be admired, is, That this Noble and Wonderful Spirit keeps the ſame vertue in Phyſick, and the ſame diſſolutive Faculty, after it hath ſerved to the diſſolution and preparation of many different ſubſtances, either Stones or Metals. We will not affirm neverthele∫s, or contend, that this Spirit remains unalterable; but this we can, that the experience we have had hitherto, has never diſcovered unto us that he can loſe any part of his acting Faculty: contrariwiſe, having drawn it off by diſtillation, it hath ever kept in our hands the ſame ſtrength and vigor it had done before, either us'd upon the ſame matter or upon another, as thoſe will moſt certainly find that ſhall employ it in their Operations. It is a Soveraign Remedy againſt Epilepſies of what kind ſoever, Apoplexy, all irritations of the Mother, all Hypocondriack and Melancholly Diſeaſes, inveterated griefs and pains in the Head, and all Scorbutick Maladies; It is admirable from j drop to x, in appropriated Liquors, but the moſt judicious Doſis in all Liquors, is to a pleaſant acidity. We cannot forbear to inſert here the very ſame words which

Doctor *Zwelfer*, Phyſitian to his *Imperial Majeſty*, hath in that Appendix, which diſcovered this Treaſure unto us; where he concludes the praiſes he hath given to this Spirit by theſe words: *Et ut ſummatim dicam, tanquam expertus in multis affectibus, qui Herculea etiam remedia rident, & contemnunt, ad hunc ſp. tanquam aſylum ſi quis accurreret, medicamentum reperiet quovis precio redimendum; Hoc fruere lector amice ſecreto, & favore mei pro fideli communicatione benevole perſevera.* This is in few words the ſenſe and teſtimony of this expert Phyſitian; wherefore I do yet inſiſt after him, and adviſe earneſtly all Phyſitians and Artiſts not to neglect the practice of the Remedy and Diſſolvent, both concentred and joyned in one ſubſtance.

But though we have herein taught the nobleſt Remedy that can be extracted from Copper, it is nevertheleſs neceſſary to teach the workings of ſome uſeful Operations in Phyſick and Chyrurgery, that when the Chymical Apothecary ſhall meet with them in any Author, he may be able to prepare them, that the Phyſitian, when he ſhall find a fit and convenient way, may make uſe thereof, for the preſervation and recovery of Patients.

To prepare the Vitriol of Venus, *with the Narcotick Sulphur, and Crocus thereof.*

Amongſt the ſeveral Preparations made upon Copper, none requires or contains ſo many Operations for the manner of the Work, nor ſo many uſeful Remedies at once as this we are now about to teach; for which reaſon we have choſen it to inform the better our Artiſt by the ſame, what he may be able to perform upon Metals, to reduce them to their Principles by a gradation of Operations: For as we have ſaid, that Metals were once Vitriol, ſo have they been alſo Sulphur before they were altogether coagulated and hardned into a Metallick Body, which is the cauſe that Art is neceſſitated to make uſe of Sulphur as a middle ſubſtance to diveſt Metals from their Body, and reduce them into Vitriol, which is thus prepared.

Take Copper in Plates, and cut it in ſmall pieces, which may conveniently be ſtratified in a great Crucible with Brimſtone reduced to Pouder, beginning to ſtratifie by a lay of Brimſtone, and then putting one of Copper, and thus continuing to ſtratifie till the laſt lay be alſo of Brimſtone; the Crucible being full, which muſt be covered with a Cover, having a hole in the middle of a bigneſs to run through it a Gooſe-quil, lute both Crucible and Cover with a good Lute not apt to crack, and let it dry gently; when it is well dryed, place it in a circular fire, and for the ſpace of an hour, give it a graduate fire by little and little, that the Brimſtone may ſoftly melt and penetrate the Plates of Copper before it takes flame,becauſe it will calcine it much better in this manner; then bring the fire nearer from the Crucible, and encreaſe it by degrees until the Brimſtone takes flame, and begins to ſend it out under the form of a Pyramid by the hole of the Cover; then bring the fire cloſe by, and without adding any more, encompaſs and cover with it the Crucible, for the addition of more fire would be unneceſſary, ſince the flame of the Brimſtone coming to ceaſe, the firſt Calcination, which is the ſcope of your Operation is performed; therefore nothing more remains to be done, then to let the Crucible cool to draw your Copper out of it, which is raiſed and become ſpongious and brickle as Glaſs, and red when ground to Pouder. They that will have but a courſe Crocus of *Venus*, may take this calcin'd Copper, which in the Shops is called *æs uſtum*; grind it to Pouder, and reverberate it three times 24 hours,and they will have a red Pouder very open, and a fit Ingredient for Salves aud Plaiſters; as for the true proportion of the ſaid Crocus, we will teach it hereafter. But there is one thing to be noted here, and not to be paſt by, which is, that the Plates of Copper muſt three times be made red hot in a Crucible in a Wind-Furnace, and as many times quench't in Urine, becauſe this opens them,and prepares to Calcination, inſomuch as all the reſt of the Operation is performed with much more eaſe.

Take then this Copper thus calcin'd, reduce it to Pouder,and for every ℔, add ℥ j ß, or ℥ ij of pulveriz'd Brimſtone, which muſt be exactly mixt: and having fitted an earthen Pot, not glazed, upon the Furnace, ſo as to be faſt and ſtable, and fit to be heated by the bottom with moderation and encreaſing of the fire; put the ſaid Pouder in, and give it a graduate fire,continually ſtirring with a Scraper of Copper or Iron, that the Pouder may not ſtick to the Pot, having a ſpecial care to burn away all the Brimſtone; and if the matter crumbles, ceaſe the fire, and after it is grown cold, grind it with the ſame weight of Brimſtone, and thus ſeven times together repeat this Calcination; or,which may be a ſurer and better way,as much as there will be need; and until the Artiſt perceives, trying by the taſte, that the Pouder of the calcined Copper is altogether Vitriolick; and that being tryed with diſtilled Rain-Water, the Water takes both the colour and taſte of Vitriol: that being ſo, put all the ſaid

Pouder in an earthen ſtone Pan, and ſoftly by degrees pour upon it ſcalding diſtilled Rain-Water, and nimbly ſtir it, and that a great while before you put it in digeſtion in Sand, to extract all the Vitriol from it; otherwiſe the Pouder would harden and crumble ſo, as it were impoſſible to mix it well with the Water, and the extraction or diſſolution of the Vitriol would not follow, and ſo ſhould you be put to begin your Operation again. The Water being tinged with a fair blew colour, filtrate and evaporate it till it begins to skin; then put the Veſſel in a cold place, to ſtand there until the Chryſtals of *Venus* are fram'd; then ſeparate the Liquor ſwimming above, and evaporate again, and chryſtallize, proceeding and reiterating this Work, until no Chryſtals more will riſe; then dry them gently, and keep for the following Preparations. This Vitriol may nevertheleſs, without further preparation, be imployed in a ſmall Doſis againſt Vices and Diſeaſes of the Stomach and Brain; it kills Worms, and ſtrengthens the Brain againſt Convulſions, and the aſſaults of growing Epilepſies; it is alſo ſpecifical to cleanſe the Matrix; ſome hold it as a grand ſecret to diſſolve a little of it in Water againſt the burning and intemperate heat of the ſpermatical and other adjacent parts, and ſo uſe it for injections, wherein they are much in the right; but for all that, they ought not to deprive the Publique and all Practitioners of Phyſick and Chirurgery of this Remedy (by concealing it to themſelves) which produces ſo Rare Effects, becauſe this Vitriol poſſeſſes in it ſelf a very good portion of that Sulphur of *Venus*, which is capable to appeaſe the irritation of thoſe parts; and the Salt of it is a great deterſive and preſent Refrigerative. The Doſis inwards, is from iv *gr.* to xv, and for Injections, the weight of ʒ j, in ℔ j of Plantain Water mixt with a little of the clarified Juyce of Houſleek, or the great *Sempervivum.*

Preparation of the Narcotick Sulphur of the Vitriol of Venus.

℞ ℔ ß of Vitriol of *Venus*, ℥ iv of filings of Steel, mix them together by long trituration in an Iron Mortar; then put the Pouder in a Matraſs of ſmooth Glaſs and very ſtrong; moiſten this matter by degrees with very good diſtilled Vinegar, until the whole maſs be well ſaturated, yet without overflowing of the moiſture; the Matraſs muſt be ſomewhat broad in the neck, that the evaporation of the moiſture may the better be performed; then place the Matraſs in Sand, leaving but half a fingers ſpace between the bottom of the Veſſel containing the Sand in the bottom of the Matraſs, give fire and gently evaporate the Menſtruum, then encreaſe the fire ſo much as the bottom of the Matraſs may grow red, if it be poſſible; then ceaſe the fire, and let the Veſſel cool, and break it to take away the maſs remaining in the bottom, which will be of a red browniſh colour; make it in very ſubtil Pouder, and put it in a larger Matraſs; ſprinkle upon it good diſtilled Vinegar, ſtirring the matter ſtill, until it ſwims above the matter the height of four fingers; then put it to digeſt and extract in Sand, and ſtir it often; it will become red and fair, and the Vinegar being well tinged, ſeparate it, and put new, and thus go on till your Pouder yeelds no more colour; then filtrate all the Tinctures, and ſlowly evaporate to the gentle Vapour of Balneo, until your Liquor be reduced to a third part; which precipitate with Oyl of *Mercury* made *per deliquium*, until all the Sulphur be ſeparated from it: for the Salt of *Mercury* attracts to it ſelf, and unites it ſelf in the Liquor to the Salt of Vitriol, and the Sulphur being no more mixt with its Salt, precipitates and ſeparates it ſelf from the moiſture, and falls in the bottom of the Veſſel; let the Sulphur ſettle, and decant and draw off what ſhall remain ſwimming above, and pour upon the Sulphur, luke-warm diſtilled Rain-Water to edulcoration, and thus continue it till the Water coming from it be inſipid; then dry this Sulphur very ſlowly, and keep it in a Glaſs Viol for uſe. This Sulphur may be given in Bolus or diſſolution, in ſome Hyſterical or Antiepileptical Water, from *gr.* j, to vj, againſt all the affections of the Uterus or Mother, Sympathetick and Idiopathetick Epilepſie. This Sulphur is an Ingredient of the *Laudanum without Opium of Hantmannus*. But the Tincture of this Sulphur hath quite another efficacy, then when it is yet in Body, and is thus prepared.

The Tincture of Sulphur of Venus.

℞ ℥ j of the above-mentioned Sulphur of Vitriol of *Venus* four fingers high; put up the Matraſs with its Blind-head, and put the digeſtion in *B. M.* with a ſlow heat, until it be well tinged with the Tincture of the Sulphur; ſeparate the Tincture, and go on in your extraction until the Spirit takes no more; then filtrate the whole matter, and draw off the Menſtruum to the conſiſtency of a liquid Extract, upon which pour of the Alkoholiz'd Spirit of Elder-berries three inches high; then cover or lute your double Veſſel or Pelican, and place it in the ſlow heat of a Vaporous

Balneo, and let it circulate,digeſt and extract ſeven dayes together without interrupting the heat, and all the Tincture of this Sulphur ſhall communicate it ſelf to this Spirit, which already of it ſelf is an Hyſterical Specifick. This eſſence muſt be filtrated in cold, and the half of its Menſtruum drawn off in Balneo, and ſo ſhall you have the true volatiliz'd Sulphur of *Venus*, uſeful againſt Diſeaſes of the Brain, and Affections of the Mother. The Doſis is from j drop, to viij,x,or xij, in Broth, or appropriated Liquors.

To prepare the Crocus of Vitriol of Venus.

℞ ℔ j of this Vitriol, and being put in a Cucurbit, place it in a cloſe Reverberatory,and fit to it a large Recipient; which being exactly luted, give to it a gradual fire, and keep it 48 hours with Coals; then after this, uſe very dry Wood to give it the laſt degree of flaming fire the ſpace of 12 whole hours; and thus ſhall you be ſure to have extracted the Phlegm, Volatile Spirit, acid and corroſive Spirit, or Oil, ſo improperly called, of the Vitriol of *Venus*, and to find in the bottom of the Retort an aſtringent Crocus, high and ſubtil, which ſome do call the *Caput Mortuum* of this Vitriol. There are ſome who preſcribe to put this Vitriol in a Crucible, to calcine and reduce it to a Crocus, but I am of a contrary Opinion, and cannot endure that an Artiſt ſhould loſe what is the beſt and moſt full of vertue in his ſubſtances upon which he doth work; for Calcination being performed in a Crucible, it muſt of neceſſity follow, that all what is found condenſed in the Recipient after diſtillation, doth exhale and vapour away to nothing; but it muſt not be ſo, ſince the Crocus found in the Retort after this diſtillation, is not inferior, but rather purer and better then that made in the Crucible; if all the Liquor be rectified in Aſhes or Sand to a dry bottom, without any diſtinction or ſeparation of ſubſtances, it is a ſpecifical Spirit againſt Cephalick and Uterine Diſeaſes, being mixt in Julaps or Apozem's to a pleaſant acidity,or us'd in the ordinary drink of the Patient. As concerning the *Crocus*, it is an infallible Remedy to ſtop the Blood, and to dry & cicatrize Wounds and Ulcers. It is moreover a Specifick internally applyed in Opiates,and externally by Injection, for the cure of Gonorrhæa's, and heat of Urine. It is alſo an excellent Remedy againſt immoderate looſneſs of the Belly, Dyſentery, Lientery, ſpitting of Blood, if it be exhibited from *gr.* iv, to xv or xx, in Conſerve of Roſes, the Patient being purged beforehand with a good Tincture of Rubarb, prepared with Water of Juyce of Chicory or Endive; it is alſo with this Vitriol that the true Sympathetical Pouder is prepared, which is capable to cure ſundry Wounds without applying any other apparel then a meer Filter dipt in common Water; provided the dreſſer hath ſome of the Blood or Goar of the Patient, and that the Linnen, into which it is received, be put in a very cloſe Box, where ſome of this Vitriol be put alſo, gently dryed in warm Air, or in a place which is fit inſenſibly to deprive it of its Phlegm, and reduce it of it ſelf into Pouder; It ſtops alſo all kinds of Hemorrhagy's, if the ſame Order and Method is obſerved with them as in the cure of Wounds.

Some Authors are alſo of Opinion, that this Vitriol may be ſublimated with Armoniack Salt, to reduce it in fluid Mercury, and then concocted and precipitated without addition, to prepare a Specifick and altogether extraordinary Remedy therewith for the Pox or Neapolitan Diſeaſe, and all its dependencies. They that will make tryal thereof, ſhall find the Proceſſes and Method of working in Authors which have treated of it; it ſufficeth us to have inſinuated the manner of the beſt Operation upon Copper, being certain that he that can perform what we have taught, ſhall never fail to bring to paſs ſuch other Operations as he ſhall undertake upon this Metal.

Of Lead, and its Chymical Preparation.

WEE are now come to the third and laſt Claſſis or form of Metals, containing the leſs noble and ſofter, which are Lead or ♄ *Saturn*, and Tin or ♃ *Jupiter*. We will ſpeak firſt of the Lead, becauſe all the Operations performed upon Lead, may be a rule for thoſe upon Tin; for the ſame Menſtruum is made uſe of, and the ſame manner of operation is required in both.

Lead is the vileſt and moſt abject of all Metals, conſiſting of an indigeſted Sulphur, an aluminous Salt more then vitriolick, and a Mercury coming very near the nature of Antimony. It is called *Saturn*, by reaſon of the ſympathy it hath with that Celeſtial Planet, as alſo its relation to the ſpleen, which is called the *Saturn of the Microcoſm*, to which it is dedicated. Lead is generally aſtringent, cooling and thickening, *&c.* It reſtores fleſh about Wounds and Ulcers, and cicatrizeth them; it cools the Venerean heats, and quenches amorous fires, appeaſes the pains and heat of Ulcers, and diſſolves Tumors occaſiond by ſeroſities lurking between the Skin and the Body. But all this is nothing in reſpect of the vertues it is endowed with, when it is well and artificially opened and prepared by the Operations of Chymiſtry, as it will appear hereunder.

General Preparations to open Lead.

AS we have ſtill begun by the purification of Mixts, upon which our work was intended, ſo muſt we more particularly take care of the purgation of Lead, ſince it is the courſeſt and impureſt of Metals; wherefore, when Artiſts will employ it in any Operations, they muſt before all things, melt it in an Iron Pot, and when it is in full fuſion, throw upon it by intervals, ſmall pieces of Wax, which inſenſibly will waſte away; and when he ſeeth the Lead bright, and with a fair aſpect, and to be very clear under the uppermoſt or ſpecifical skin, let him remove the ſaid skin, and throw it in clean Water, to put afterwards to ſuch uſes as he intends.

This Lead ſo purified, muſt be reduced into Calx, if you intend to extract the vertue of it; for though this Metal be ſoft, and of eaſie fuſion, yet muſt it be calcined to be opened, not onely to advance the Operation of ſuch Menſtruums as ſhall be made uſe of, but alſo that the extracted ſubſtance may be ſo much more efficacious and full of vertue. This Calcination is performed ſeveral wayes: for there is an incineration, which reduces Lead to gray Aſhes or Calx, which is brought to paſs only by ſtirring melted Lead in an earthen Pot made red hot in the fire. There is moreover a Reverberatory Calcination, when this firſt Calx is reverberated in a Reverberatory Furnace with flaming fire, ſo ordered nevertheleſs that it ſhould not melt; and when the Calx hath changed colour, and begins to grow yellow, it becomes a fit colour for Painters, which they call *Macicot*; but if it goes to the height of an Orange red, it is called *Minium* in the Shops. The third Calcination, is that which is performed in the purification of Gold and Silver by the Cupel, where the Lead which remains and flies not away in Vapours, is calcined and changed as into a yellow, red or white skin or froth, which is called *Lytharg*. The fourth is, the Cementatory Calcination, which is performed by cutting pieces of Sheet or tally Lead, and ſtratifying them with Brimſtone, and calcining it afterwards, as we have ſhewed of Copper; and when the calcined Lead is waſhed, dryed and reduced to Pouder, it is that which in

Shops is called *Plumbum Uſtum*, or burned and calcined Lead. The fifth and laſt calcination of Lead, is that which they call *Vaporous Calcination*, which is performed by ſuſpending plates of Lead upon a Spirit or ſharp Liquor, the Vapour whereof doth by degrees calcine the Lead, and reduces it into that ſubſtance which is called *White-Lead* or *Ceruſs*. The Artiſt muſt chuſe of all theſe Calx's of Lead which he likes beſt to prepare the following Remedies: but he muſt not deliberate or ſtick at taking thoſe which by the action of fire are more open, ſuch as are *Minium* and *Lytharg*, ſince he ſhall much better therewith attain his deſired ends. We will firſt teach to prepare well the Liquor and Salt of *Saturn*, which is alſo called its *Sugar*, by reaſon of its aluminous ſweetneſs, as alſo the falſe and true *Magiſtery*, the *Cremor*, *Butter*, or *Nutritum of Saturn*, the *Balſam of Saturn*, the *Spirit*, yellow and red *Oil of Saturn*; all which proceſſes and manner of working we will deliver one after the other.

To prepare the Sugar or Salt of Saturn.

℞ ℔ ß of *Minium*, and as much of *Lytharg*; reduce it to a ſubtil Pouder, and put it in a Cucurbit of Stone or Glaſs Metal; and pour thereon very good diſtilled Vinegar, four or five inches high; then place the Cucurbit in Sand, and give a ſufficient fire to cauſe the Vinegar to boyl; but note, that you muſt continually ſtir the matter with a Wooden Slice as ſoon as you have put in the Vinegar, or otherwiſe it will too ſoon ſettle in the bottom of the Veſſel, and grow into a hard ſtony and compacted maſs, which cannot be well diſtempered afterwards, and will ſtop the Pores of the bottom of the Veſſel, which will occaſion the breaking of it by the action of the heat finding the free paſſage ſtopt. Theſe Calx's of *Saturn* muſt be kept boyling eight or ten hours, renewing ſtill diſtilled warm Vinegar, as the firſt does vapour away; then filtrate all the diſſolved matter warm, and lay aſide a fourth part of the filtrated Liquor, which is called *Liquor of Saturn*. But pour the remainder in a Tin Skillet or Baſon, and put in a cold place the ſpace of 24 hours, and you ſhall find all this Liquor almoſt changed into a white chryſtalline Salt, which at firſt is ſweet in taſte, and of a vitriolick ſharpneſs at laſt; the ſuperfluous Liquor decant by inclination, and evaporate to half the conſumption, and put it alſo in Tin to ſhute into Chryſtals, thus continuing until it yeelds no more Chryſtals; mix the remainder with the Liquor ſet apart before, if it be clean; if not, run it through a Linnen, and mix and digeſt together to unite them the better; dry afterwards between a double Paper, the Salt of *Saturn* in a temperate heat, and keep it for uſe. If the reaſon be asked, Why we cauſe the diſſolution of Lead to be put in a Tin Baſon? We anſwer, Becauſe this Metal hath in it ſelf a ſharp coagulating Spirit, which cauſes all the matter which is fit to ſhute into Chryſtals in this Liquor, to turn ſooner, and take body better then it would do in another Veſſel, as experience will teach thoſe that ſhall make proof thereof.

It is a very ſtrange thing that all Antient Authors, and even the moſt part of Modern, have ſo much equivocated upon the vertue of this Salt of *Saturn*; for they will have it to be cold inwardly taken, and to hinder the Act of Generation, and yet do attribute to the Spirit, which is drawn from this Salt by diſtillation, an active, ſubtil and penetrative vertue, which drive away by ſweats the malignancy of Peſtilential and Venemous Diſeaſes; and affirm moreover, that it is a ſpecifick againſt the Neapolitan Diſeaſe, which are things repugnant and diſſonant to Reaſon; but all this miſtake and confuſion proceeds onely from that Antient Authors have unanimouſly delivered, that Lead was very terreſtrious, and conſequently cold; moreover, Vinegar is an Ingredient of its preparation, which is alſo cold, according to their ſaying; but, both they and Modern Artiſts ſhould have conſidered that Lead is a Metal that hath much Sulphur, and is called ***Aurum Leproſum***, Leprous Gold; and though very unripe and earthly, yet it is never without ſome portion in it ſelf of the two nobleſt Metals, indiviſibly mixt in the *Chaotical* (if I may ſo ſay) and undigeſted matter of Lead, which gives and communicates unto it much vertue; It muſt alſo be remembred, that the external fire imployed in the Calcination of *Saturn*, doth potently ſtir up its internal fire, which concocts and digeſts all the unripeneſs or pretended immaturities, driving away what is there of impurity, and exalting and perfecting more and more the Seeds of that purity which are encloſed in it; which makes me to pronounce boldly, that the Salt of *Saturn* is a very good Medicine againſt all Agues, either continual or intermittent; it is alſo a ſpecifick in Diſeaſes of the Spleen, and all Vapours ariſing from it; it may alſo be given againſt Diſeaſes of the Breaſt, diſſolved in Juyce of Scabious Water, with equal weight of purified Niter; the Chryſtals are very good againſt Aſthma's or ſhort breath. The Doſis of Salt of *Saturn* is from ij to xx *gr.* in appropriated Liquors, or in Bolus in ſome Conſerve or Jelly. The Nitrous Salt of *Saturn*, is from iv *gr.* to ʒ ß; but if the ſaid Salt is ſo efficacious for internal Diſeaſes, it is no leſs for external; for this wonderful metallick Mummy cannot enough be eſteemed; this Balſam and ſweet Salt which kills all corroſive, harſh and biting Salts, which cauſe the pains of Wounds and Ulcers, whereby the grief and inflammation of the parts is excited, and from which flow all other accidents; it reſolves and mollifies hard and ſchirrous Tumours, takes away the ill-favoured colour and lividity of Bruiſes and Contuſions, and hinders extravaſated blood from turning to corruption, and coming to ſuppuration; it is an unparallel'd Remedy to take away the itching and inflammation of the Eyes; it is mixt in all Salves, Liniments, Plaiſters and Collyries, by reaſon of the noble effects it uſes to produce.

The uſe of the Liquor of Saturn, *and how to make with it the falſe Magiſtery, Cremor, Butter and Nutritum.*

WEE have ſaid here above, that the Artiſt was to lay aſide ſome part of the diſſolution of the Calx of Lead for his uſe, which is very conſiderable; for this Liquor may be made uſe of, being mixt with common Water, to make a Saturnine Extract, which is endowed with wonderful Vertues to reſolve, dry, temper and refreſh all the external parts any wiſe offended, dipping Fillets in it, and wrapping about the members after they have been dreſſed and fitted by the Chirurgeon; it hinders all inflammations, and aſſwages all Swellings; ſo that I adviſe the careful Surgeon, which minds the good of his wounded Patients, and his Reputation, never to be without this Liquor.

Put of this Liquor in a Diſh, and pour upon it Oil of *Mercury* made *per deliquium*, and immediately a Salt of *Saturn* will precipitate it ſelf into a very white Pouder, which is that improperly called, the *Magiſtery* of *Saturn*, being to ſpeak properly, nothing elſe but a very ſubtil Ceruſs; for when the Salt of the Vinegar, which is acid, and holds the Lead in diſſolution, comes to loſe this acidity wherein conſiſts it diſſolutive ſtrength by the action of the Salt of *Mercury*, which is lixivial; the Lead muſt of all neceſſity fall down, having nothing more to uphold it. This Precipitate muſt be waſht to a ſweetneſs in common Water; and the laſt time with very good Roſe-Water, and dryed afterwards gently; It is a very fair White for Pomatums, which may alſo be uſed in Salves and Collyrie's, for it is an excellent deſiccative, acting gently and inoffenſively.

To make the Cremor, Butter, or *Nutritum* of *Saturn*, grind only in a

Braſs Mortar, Liquor of *Saturn*, with Oil of Olives, or Roſes, putting a little of each of the ſubſtances one after the other, and ſtirring them nimbly and ſtrongly together, until all be united and form'd into a ſubſtance like unto Cream or Butter, called *Nutritum* in the Shops; if you make uſe of Oil of Olives, this Lintment will be very white; but if Whey, or Oil of Roſes, it will become yellow, the acid of the Liquor having in ſome kind reſuſcitated and revived the colour of the Roſe, which was hidden, and as it were, buried under the greenneſs of the Oil. It is a ſoveraign Remedy againſt breaking of the skin by bruiſes or otherwiſe, Itch, Scab, inflammations of Boils, Botches, Eriſipela's; for beſides that it doth dry powerfully, it deads alſo, and mortifies the ill Ferment which is in the part, and cauſes all the irritations and accidents thereof; it doth wonders againſt Burnings, and to allay the grief of hot Gouts, without giving any occaſion to fear it ſhould ſtrike the humour in by the pretended coldneſs which is attributed unto it: contrariwiſe it may be uſed with confidence, ſince all the Remedies taken out of Lead do work by the ſubtilty of their parts, and reſolve all ſuperfluities; as alſo kill and mortifie all the acidity, malignant and preternatural acrimony which cauſes the tenſion, inflammation and grief of the parts.

To prepare the right Magiſtery of Saturn.

℞ ℥ ij of Ceruſs, and having made it into very ſmall Pouder, put the ſame in a Matraſs, pouring upon it ℥ vj of the Spirit of *Venus*, by little and little, and ſtir them together that the Spirit may reach to the bottom; place the Matraſs in *B. M.* and keep it there warm in digeſtion the ſpace of 12 hours; then filtrate ſoftly the diſſolution, and let the filtration reſt one night in a cold place, after which you will find it coagulated into white Chryſtals; ſeparate the ſuperfluous Liquor, and draw the Spirit in Balneo by diſtillation to a dry bottom, and you ſhall have in the bottom of your Veſſel, the Magiſtery of *Saturn* diſſoluble in all kinds of Liquors, like unto the firſt, which was in Chryſtals, in reſpect of its Vertue, which you muſt dry in a ſlow heat between two Papers. This Magiſtery may be adminiſtred in all Diſeaſes, wherein we have ſaid the Salt of *Saturn* to be good and conducible, and we ſhall find from it much better and quicker effects, then thoſe we have attributed to the Salt made with Vinegar; but the Doſis of it is leſs, for it ſufficeth to give of this Magiſtery from ij *gr.* to xij. Note, that the Spirit of *Venus*, which you have made uſe of in this Operation, drawn off again by diſtillation, is good yet for the ſame Operation, and any other to which it might be employed, for it doth not loſe of its action or vertue for Phyſical uſes, nor power and efficacy for diſtillation and extraction of Tinctures.

To make the Balſam of Saturn.

℞ ℥ ij of good Salt of *Saturn*, in ſubtil and light Chryſtals, and being reduced to Pouder, put it in a Matraſs, pouring upon it ℥ iv of Ætherial Oil of Turpentine, well diſtilled, which commonly is called *Eſſence*; the preparation whereof we have taught before, but not of that ſpurious Oil of Tar ſold in Grocers Shops: digeſt theſe two matters in Aſhes in a moderate heat, and ſtir them five or ſix times a day, until the Oil hath contracted a very fine red colour; then add ℥ ß of Camphire, and leave them together in digeſtion 24 hours, until the Camphire be diſſolved and united to this excellent Balſam, which muſt be filtrated in a Glaſs Funnel through a little Cotten, and kept in a Viol for uſe. This Balſam is endowed with very great vertues, which makes it worthy of the Cloſet of Chymical Artiſts, and the practice of the moſt skilful Surgeons; for it cures the moſt inveterate Ulcers, diſſolves and reſolves all Swellings, revives and animates again ſtarved Members, cures green and new Wounds, and hinders bad accidents thereof; doth wonders in the cure of Fiſtula's, growing Cancer or Morphew; finally, it is one of the beſt and ſafeſt Remedies uſed at this day by the skilfulleſt *German* Practitioners.

To prepare the Spirit, Yellow and Red Oil of the Salt of Saturn.

℞ ℔ j of Salt of *Saturn*, very ſubtil and chryſtalline, diſſolve it ſeven times conſecutively with the beſt diſtilled Vinegar, and evaporate as many times; then put it in the Canicular or hotteſt dayes of the year, in a very cold Cellar to diſſolve in Liquor; this Liquor put in a Retort placed in a Reverberatory Furnace upon an earthen Pot, the Cover turned upſide down, having about one inch thick of Sand or Aſhes between the bottom and Retort; fit to the neck a very capacious Recipient, the joints whereof muſt be luted with all poſſible care; and the Lute being well dryed, give fire to it with the ſame care, circumſpection and Rules of fire, as we preſcribed in the diſtillation of the Spirit of *Venus*; and when you ſhall ſee heavy and red drops to fall down, and that the Recipient grows clear of it ſelf, ceaſe the fire; there is ordinarily 20 or 24 hours required for this Operation. That which after diſtillation is found in the Recipient, contains four ſeveral Liquors, *viz.* a volatile and ſubtil Spirit, a yellow Oil, a Phlegm, and a red Oil; make the Rectification and Separation thereof in a Retort very clean, in *B. M.* or Aſhes; then change the Recipient to ſeparate the ſaid Liquors, according to the following Notes and Direction. The volatile and æthereal Spirit paſſeth through the neck of the Retort, without framing any Veins therein; the yellow Oil follows after, which frames oblique and winding Veins; wherefore as ſoon as this ſign doth appear, the Recipient muſt be changed. The Phlegm follows after the yellow Oil, in ſtraight and direct Veins, and the red and ſlow Oil remains in the bottom of the Retort.

The volatile Spirit of *Saturn*, is a wonderful Sudorifick; wherefore it is excellent againſt the Plague, Madneſs, Palſie, Epilepſie, and remainders of Apoplexy, afflicting the Body or Mind, and ſometimes both; as alſo in malignant and burning Feavers and Pox. The Doſis muſt be from iv drops to xx, in Decoctions, or Waters appropriated to the nature of the Diſeaſe.

Digeſt the yellow Oil upon Calx of Gold well opened, or upon Crocus of *Sol*, in a ſlow heat of the vaporous Balneo, in a circulatory Veſſel Hermetically ſealed, and it will become as red as blood. It is a great Arcanum, or ſecret Remedy againſt all griefs of the Heart and Brain, being adminiſtred from j drop to iv, in the Spirit of Lillyconvally, or good Sack.

The red Oil, is a miraculous Balſam, being circulated with equal parts of Oil of Camphire, and tartariz'd Spirit of Wine, the ſpace of fifteen dayes, after which the Spirit of Wine muſt be drawn again in a ſlow heat of Balneo, and there remains a Balſamick Eſſence, which cures plain Wounds from one day to another, being only ſlightly rub'd with a Feather dipt therein. It may be made uſe of in the cure of all the ſame Diſeaſes, to which we have ſaid that the Balſam of *Saturn* did conduce; for it is the true Balſam and Mummy impregnated with the Sulphur of *Saturn*.

Of

Of Tin, and its Chymical Preparation.

TIN is the ſecond Metal of the laſt form, and one of the leſs noble, though it hath many good qualities, both for Phyſick and Metallick. It is a white and ſoft Metal, ſhining with a brightneſs mixt with ſome blackiſh gloomineſs, conſiſting of a more pure Mercury then that of the hard Metals, but ſofter and more volatile; It is nevertheleſs more fixt then that of Lead, and hath a white undigeſted and unripe Sulphur; this Metal hath very little of Salt, which is for the moſt part, the bond and union between the Mercury and Sulphur of Bodies, whence proceeds its poroſity and harſhneſs. Hermetical Philoſophers call it *Jupiter*, by reaſon of its congruity with that Planet, in the great World; and the virtual ſympathy it hath by the Remedies extracted from it with the Liver and Womb, to whom it is particularly dedicated in Man, the little World.

It is not neceſſary for us here to repeat unneceſſarily the manner of extracting the Salt, and making the falſe and true Magiſtery of *Jupiter*, ſince it is the ſame way we have taught upon *Saturn*. We are onely to give notice, that the Calx of *Jupiter* muſt be reverberated, taking it as it is already prepared for Potters to uſe, and that the ſpace of two dayes, whereby to open it as it is fitting; otherwiſe very little Salt will come of it. The Salt and true Magiſtery, are ſpecifical Remedies, and ſingular againſt Suffocations and Fits of the Mother, which are wonderfully allayed by it, whether adminiſtred inwardly, or outwardly applyed. They are alſo admirable Topicals for the cure of putrid, ſtinking, hollow, fiſtulous and cancerous Ulcers, and againſt Wolves. The Doſis inwardly taken, is from j *gr.* to vj in Bolus, in ſome Conſerve of Balm, or Flowers of Penny-royal, the Spirit of Elder-berries, or Spirit of Karabe or Yellow Amber. But let the Artiſt be very wary, in purging thoſe Women that have made uſe of this Remedy, with ſome gentle and convenient Purgation which irritates not the Womb; otherwiſe he muſt begin anew. Wherefore let him have a ſpecial care, not to ſtir the ſeroſity of this dangerous Animal, after it is once quieted and laid aſleep by the eradiating vertue of the metallick or mineral Sulphurs; and as he knows and is ſufficiently inſtructed, that the Anodyne vertue proceeds from this (Mineral) Family, let him make uſe of purgative Remedies, and thoſe Diuretical, *&c.* Diaphoretical Preparations, which it doth ſo plentifully yeeld, and that have neither ſmell nor taſte, that can irritate and provoke afreſh this delicate and tickliſh part.

The Diſtillation of Tin, yeelding ſeveral noble Remedies, both againſt Internal and External Diſeaſes.

WEE are engaged to give here the manner of an Operation upon *Jupiter*, which contains ſeveral very uſeful Remedies, and very conſiderable Obſervations, whether in reſpect of the work, or of the matters which are made uſe of, and whereby the Artiſt may be taught to penetrate further into the knowledge of ſeveral other and better things, whileſt he is in the way towards this.

℞ ℥ iv of very ſmall filed Tin, and being mixt in a Marble Mortar with ℥ xij of corroſive ſublimate *Mercury*; put this Pouder in a Retort with a very large neck; and having placed it in Sand, about half an inch thick upon the bottom of the Diſh that contains it, give it a convenient fire, and you ſhall firſt draw a Spirit continually ſmoaking; then afterwards it will yeeld a Butter, or a kind of corroſive Icy Oil. And in the third place, the *Mercury* will be revivified or quickned again abundantly, being no longer ſtayed or coagulated by the Spirits of thoſe Salts which have forſaken it, to work upon the body of the Tin; this done, encreaſe the fire downwards, and give it a fire of ſuppreſſion, and all the ſubſtance of *Jupiter* will aſcend in the neck of the Retort, under the form of a gray Gum very hard, ſo that in the bottom will remain very few red feces; reduce immediately this Gum into Pouder, otherwiſe it would quickly grow moiſt in the Air, and put it in a Cellar upon a ſheet of white Lattin, being edged about, and a ſmall gutter or mouth, by which the moiſtneſs and coolneſs of the Celler, having reduced it into a yellow Oil, it may run and be received in a Diſh of Glaſs or Stone-Metal, fitted under the ſame to be as a Recipient. This Oil in Chirurgery, is an admirable Medicine to eat up proud fleſh, and the hard or thick skin of Ulcers; but the Surgeon muſt handle it with dexterity and judgment; for it muſt only be applyed with a Pencil very gently, by reaſon of its penetrating ſubtilty, though it be not ſo corroſive as the Butter which comes forth after the Spirit; and is a true Cauſtick that muſt alſo be uſed with diſcretion, when applyed to hinder the progreſs of ſome dangerous gangrening, and to make Iſſues or ſudden Cauteries; as likewiſe to accelerate the exfoliation of Bones, and the ſeparation of rotten parts, and the

Exoſtoſes cauſed by Nodus's in the Pox. But there may be an excellent *jovial Diaphoretical* made out of this Oil or Butter, diſſolving it with diſtilled Rain-Water; for as you ſhall be ſtirring, and the Water ſhall diſſolve the Salts of the corroſive Sublimate, which kept the Tin in diſſolution, it will immediately fall and precipitate it ſelf in a white Pouder in the bottom of the Veſſel, which muſt be dryed and edulcorated, and you ſhall have in it no deſpicable Diaphoretick; which may be adminiſtred from ij *gr.* to viij, in Conſerves, Confections or Preſerves, or in appropriated Waters or Spirits, for ſuch as are troubled with ſuperfluous Seroſities, and chiefly in accidents and caſes of the Great POX; as likewiſe moſt ſpecially for Women troubled with ſlackneſs, or too much moiſtneſs of the Womb. And as we have often ſaid, that the Chymical Artiſt muſt be cautious not to loſe or waſte any of the Subſtances he prepares; but contrariwiſe, muſt know them throughly, as much it is poſſible, to be capable to employ them uſefully, according to the vertue which is in them; he muſt take that red matter, which after diſtillation is found in the bottom of the Retort, and joyn it with what remains after the reſolution of the Gum, in a Cellar, upon a Leaf or Plate of white Lattin, which are nothing elſe but the Sulphur and Salt of the *Mercury* and Tin; the ſeparation whereof he is to make by the help of diſtilled Rain-Water, which diſſolving the Salt, the Sulphur ſinks downward, the Liquor whereof is to be ſeparated, filtrated and evaporated in Salt, which diſſolve again, filtrate and coagulate, and thus continue until it be clear, fair and green as an Emerald; as for the Sulphur, it muſt be edulcorated, dryed gently, and kept for uſe. The Salt is Diuretical and Aperitive, and is adminiſtred from j *gr.* to iv, in Broth or White-Wine, to cleanſe the Womb, and thoſe parts which have any relation to it. The Sulphur is a good Sudorifick and Anodyne. The Doſis is from j *gr.* or ß, to *gr.* iij, in Emulſions made with the Seeds of Lemon, *Carduus Benedictus*, or Holy Thiſtle, and white Poppy with Cordial Waters; it is a ſpecifick Remedy for Women troubled with Diſeaſes of the Mother; the Spirit alwayes ſteeming, which was the firſt drawn, is alſo a very ſtrange ſubſtance; for beſides that, it will not be kept in by any Veſſel, without yeelding continually white Vapours, and without any ſenſible diminution of its weight or vertue; it is ſo active, ſubtil and penetrating, that it ſtops and puts at a ſtand, not only Gangrenes and Wolves, the offending parts being only rub'd with it, but even can hinder the progreſs and running of the Sphacelus, which is a rottenneſs of the Bones; in which Cure, it goes even beyond the Water of Quick-Lime, whereof we have ſpoken, and taught the making above. Beſides all what we have ſaid, there is a noble Preparation yet to be made with this Spirit; which is, to take as much as you will of it, and put it in a Matraſs broad at the neck, and ſoftly, by little and little, and by intervals, pour upon it Tincture of Salt of *Mercury*, immediately will riſe a fermentation with ſeveral bubbles, which break with ſome kind of noiſe and ſmoak or ſteem; you muſt go on in pouring of this Tincture, till the noiſe and bubbles do ceaſe: place afterwards the Veſſel in warm Aſhes, and the matter will turn into a coagulated ſubſtance, black as Pitch; to which giving a fire of ſublimation, you ſhall have white Chryſtals melting as Wax, which are a very good cure of Scrophulous and Cancerous Ulcers, as alſo any ill remainders of the Pox, becauſe they cauterize almoſt without any pain to the very bottom of the Ulcers,and cauſe the ſeparation of dead Fleſh or Scar, leaving the Ulcer without malignity, which muſt afterwards be filled with the Balſam of Sulphur, and the Plaiſter of *Rullandus*, called *Diaſulphuris*. With this we put an end to Metals, to come to Minerals, which are next kin to them.

SECTION IV.

Of half, or ſemi-*Metals, and middle or mean Minerals, which come the neareſt to the nature of Metals.*

WEE bring in this Section, thoſe ſubſtances which follow more immediately, and have a greater affinity and correſpondency with Metals, which ſome call *ſemi-Metals*,*middle-Minerals*, and ſometimes alſo *Marcaſſites*; but this laſt appellation is only proper to Antimony, and not to Quick-ſilver; but the Quick-ſilver and Antimony, are the matter and ſubject of this Section; for we will not ſpeak of *Mineral Cinnabar*, by it ſelf on purpoſe, ſince we are to mention it, when we come hereafter to treat of *Cinnabar*, or Artificial Vermilion, which is a ſublimation of Mercury and Sulphur, or Brimſtone and Quick-ſilver.

Of

Of Quick-ſilver or Mercury, and its Chymical Preparation.

MERCURY, is a mineral volatile Liquor, which greedily ſticks to Metals, and above all, to Gold. It is alſo called *Quick-ſilver*, and ſometimes found running and pure in Mines, but very ſeldom; for it is for the moſt part drawn by Revivification from a mineral Earth, vulgarly called *Cinnabar*. The choice of it is much to be heeded, becauſe it is not equally good, but accordingly proves more or leſs uſeful in Chymical Operations; for Mercury may hold ſomething of the foulneſs and impurity of his Matrix, which is the place of its formation and original, either by reaſon of the earthly Recrements, and other filth which do pollute and defile it; or by reaſon of ſome impure mixture, or amalgamation and ſophiſticating of the Merchants who uſe to ſell it.

As for the choice to be made of it, by reaſon of its original, that which grows near Mines of the moſt pure and noble Metals, and chiefly thoſe of Gold, is to be preferred; wherefore that which comes from *Spain*, and from the Mines of *Hungary*, is ever to be choſen before any other. The matters which naturally corrupt and deprave Mercury, are Arſenick, Antimony, Lead and Cadmia: but there is beſides an artificial Sophiſtication, very hard to be diſcovered and diſcerned, either by ſight or weight; for it is mixt with ſome part of Lead or Biſmuthum, ſqueezed through Leather, ſo as nothing remains behind: yet this Cheat may be diſcovered and found out two ſeveral wayes; the firſt by diſtilling it in a Retort, for if no dregs or impurity remains in the bottom of it, it is a ſign that the Quick-ſilver is pure; the ſecond is, by evaporating of it in a ſilver Spoon in open fire, for if the Mercury leaves only a yellowiſh or white ſpot, it is a ſign of its purity; but if it leaves a brown, black or obſcure, it is a ſign of its foulneſs, and of being ſophiſticated. There are yet nevertheleſs ſome other wayes of depurating it wholly, which we will place amongſt the Preparations of Mercury.

The general vertues of it cannot very well be deſcribed, having not yet been ſufficiently tryed; for it may be ſaid, with truth, that they never were yet diſcovered by any to the bottom: Thus much nevertheleſs may be ſaid, That Mercury is an internal cleanſer, or mundificative of the whole maſs of the Blood, and that it expels from it whatſoever the depravation of digeſtion and evil fermentation may have contracted and mixed in it of dangerous and hurtful humours; but particularly it cleanſeth the body from the venomous infection of the Pox; kills and expels Worms, advances and haſtens difficult Birth; but in outward applications, cures all manner of Scabs and Itch, deſtroys all manner of Vermin, and diſſolves hard Swellings and Tumors; hung to the neck, it is a preſervative from Plague; and ſome are even of opinion, that it may hinder Witchcraft, Charms and Incantations; finally, it may be ſaid, with much reaſon, that except it be Antimony, there is no ſubſtance under the Sun of ſo general a Vertue, nor yeelding ſo many different Remedies againſt all Diſeaſes; for it ſupplies us with Vomitives, Purgatives, Diaphoreticks, Lenitives, as it will appear when we come to particularize the ſeveral deſcriptions, and the ſeveral Proceſſes and Operations incident to the preparation thereof. But we muſt advertiſe our Artiſt, that Quick-ſilver is called *Mercury*, by reaſon of the correſpondence which is between that Planet, and this ſemi-metal; and that as *Mercury* is an inconſtant and changing Planet, ſo likewiſe this Mineral makes himſelf all to all, hot with the hot, cold with the cold ſubſtances, and ſo of the reſt. Some give it the Rule of, and place it over the Lungs; and others ſubject unto it, the inferior Ventricle, as alſo the uppermoſt or whole Belly: but I hold of a more univerſal Opinion, and ſay, That I believe Mercury univerſally to work upon all man's body, and to drive away generally all Diſeaſes and Griefs from it, of what nature ſoever; ſince we ſee that Remedies taken from Mercury, are a cure of Leproſie and Pox, which are Diſeaſes, and a corruption of the whole Subſtance. I leave nevertheleſs, thoſe that will diſſent from me, in the freedom of their Judgment.

The general Preparations made upon Mercury, are, Purification, Calcination, Precipitation, Sublimation, Diſtillation, Extraction, Liquation, Reſolution into Liquor, and Salification. We will give ſome Examples of the Work, which all theſe general Operations do require, that they may be a Model and Introduction to the Artiſt, to poſſeſs the whole Harveſt of Remedies, which Mercury will yeeld to ſuch as will take the pains to examine and anatomize it; for as it is a *Proteus* which takes all ſorts of forms, and changes himſelf into all manner of colours, it would never be done, if we would heap here all the Obſervations, and relate all the Particulars, which both by Reading and our Practice we have diſcovered in the nature of this Mineral.

The

The Purification of Mercury.

WEE ſhall not ſpend time here in making a long deſcription of all the Lotions, Frixions and Agitations, with which ſome have pretended to cleanſe and purifie Mercury of its natural Impurities, and the ſpots of Sophiſtication, becauſe they are not the right means to deprive it of its filth and foulneſs; it will ſuffice onely, if we ſhew the manner of Revivifying and Extracting it from Artificial *Cinnabar*, by the help of Filings of Iron, ſince it is the ſureſt way for obtaining very pure and clean Mercury, to uſe afterwards towards all ſuch Preparations as the Artiſt will take in hand.

The Revivification of Cinnabar into flowing Mercury.

℞ ℔ j of Vermilion, or Artificial *Cinnabar*, which is nothing elſe but ſublimated Quick-ſilver with Brimſtone; bray it in a marble Mortar, with a wooden or glaſs Peſtle, and mix it with equal weight of filings of Iron; this mixture put in a ſmall Retort, ſo as to be filled to an inch near the top of it; then place the Retort upon a broken Brick, with a little of Lute under, and fit the neck thereof to a Recipient half full of Water; Lute it, and having put Bricks round about the Retort, four fingers diſtant from it, fill up the ſpace between with black Charcoals two inches high; then mix kindled Coals with it in four ſeveral places equally diſtant, and cover the remainder of the Retort of black Coals alſo up to the top; and ſo ſuffer the fire to kindle ſlowly of it ſelf, that the Retort may inſenſibly grow hot and by degrees, and all your *Cinnabar* will come over the Helm in flowing Mercury, either ſhaped in Vapours, or in Body into the Recipient, leaving only behind the Brimſtone, which had been ſublimated with it when the *Cinnabar* was made, which here cleaves to the Iron remaining half calcined and half opened in the Retort, and is then very fit to make the Aperitive or Aſtringent Crocus therewith, that nothing may be loſt. Thus done, unlute the Recipient, throw away the Water, and dry the Mercury, running or ſqueezing it often through a white and dry linnen Cloth; then run it alſo three or four times through Chamoy Leather, and keep it in a Viol to uſe in all Operations, as a very clean and pure Mercury; for beſides that, it hath already been purified by the firſt

Operation, which was its ſublimation with Brimſtone, the manner whereof we ſhall teach hereafter ; this Revivification doth yet cleanſe and purifie much better, becauſe the Iron doth greedily draw the Brimſtone to it ſelf, and keeps alſo whatſoever impurity might have riſen with it in the former ſublimation.

The Calcination and Precipitation of Mercury.

Though commonly the Calcination of Mercury be called *Precipitation*, it is nevertheleſs a very improper expreſſion ; for nothing can be ſaid to be precipitated, that has not before been diſſolved, and doth return to a body by the infuſion and injection of ſome Salt or Spirit, and then the Diſſolvent leaving that which it had diſſolved, it falls and precipitates it ſelf in the bottom of the Veſſel ; but uſe having prevailed to call Mercury *Concocted*, *Digeſted* and *Calcined*, a *Precipitate*, we will keep this Appellation which is found in all Authors. This Precipitate is made with Mercury alone, or with ſome addition of either of the two Luminaries, or of both together, which are *Sol* and *Luna*, Gold or Silver ; we ſhall exemplifie it here, as alſo ſhew the method of ſome other Precipitates, which are made after diſſolution in ſome convenient Menſtruum.

To make the Precipitate of Mercury without addition.

℞ A double Veſſel called *Infernus*, a Hell by Artiſts, flat and broad in the bottom ; and throw in it ij, iij, or iv ℥ of Mercury, purified and cleanſed, in the manner by us delivered above ; ſtop the upper part of it with a ſingle Paper, and place it in Sand, very equally in its Poiſe or Equilibrium, ſo as the Mercury may be evenly ſpread upon the whole ſurface of the bottom of the Veſſel, lying no thicker in one part then in the other, that the fire might equally work upon the whole ſubſtance of the Mercury at the ſame time. Begin your fire at firſt ſlowly, and encreaſe by degrees, until the whole Mercury be changed, calcined or precipitated into a red Pouder as mineral *Cinnabar*, very bright, ſhining & ſparkling to the eye. Digeſt it the ſpace of three weeks with Alkohol of Wine, and kindle it ſeven times over, by which the concoction and fixation of it will be perfected. It is an univerſal mercurial Remedy againſt all Agues, but particularly a true Specifick againſt the Pox, which it radically cures, if it be adminiſtred ſeven times to the Patient to provoke ſweating, for it is an infallible Sudorifick; it kills alſo the Worms in the Stomach, and thoſe which are generated in the Guts and Inteſtines. The Doſis muſt be from ij *gr.* to viij, in ſome Conſerve, Confection or Cordial Extract; the Patient muſt keep his Bed when he uſes it, and muſt take care of being well covered, expecting patiently till the ſweating comes, which will not fail to bring along with it the hoped-for and deſired ſucceſs. But the Artiſt muſt not grow faint and weary in this Operation, though it be long and tedious; he muſt beſides take care to rule the fire with judgment and diſcretion, otherwiſe he will be put often to begin anew, becauſe if there be any fault in ordering well the fire, the Veſſel will break. This Operation is ſlow and tedious by reaſon of its length, for it cannot be perfected under ſix weeks, yea, two, three or four months, according as the Artiſt ſhall take care to prepare ill or well his Mercury, and govern well his fire with care and aſſiduity.

To make the Solar or Lunar Precipitate.

THere is no need here to repeat any thing of the manner of the Veſſel; we only adviſe our Artiſt to note, that he may make this Operation, as alſo the foregoing, in a plain Matraſs, without making uſe of a Hell; for that kind of Veſſel being rare, it would put a needleſs difficulty and rub upon the Work; Yet let the Matraſs however be flat and plain in the bottom, and ſtopt in the mouth onely with a wooden Pin, which may eaſily be taken away, to throw down again the *Mercury*, which may have raiſed its ſelf by ſublimating into the neck of the Veſſel. We have no more to do here, then to add the Doſes of the Metals which are intended to be added to the *Mercury*, to communicate unto it ſome other vertue then that it hath already from it ſelf: for as we have ſaid, there may be Gold or Silver added, or both together. If it be Gold alone, after it hath been three times purged by Antimony, it muſt be made into an Amalgam with viij p. of *Mercury* purified; and this Amalgam put in the Veſſel and there concocted, as hath been ſaid above. If it be Silver, it may be mixed ij p. upon viij, but let it be very pure Silver of Capel made in Leaves or very ſubtil Calx, that it may be the better amalgamed and incorporated with the *Mercury*; and then concoct it in the Veſſel, as hath been ſaid; and if the Artiſt hath any deſire to communicate to the *Mercury* the properties of both Luminaries, he ſhall make his Amalgam with j p. of Gold, and ij p. of Silver, melted with vj p. of very pure and clean Regulus of Antimony, with vij p. of purified *Mercury*, to be concocted according to Art. The Solar Precipitate is given from j *gr.* to vj. in the ſame Vehicles and Ingredients we have already ſaid, and for the ſame Diſeaſes; except that it hath this vertue more, to be ſpecificated for ſtrengthening and corroborating the Heart, and to drive away all weakneſſes and griefs from it. The Lunar Precipitate is alſo,as it were,ſpecificated and deſtinated to the Head,beſides the general Vertues it hath of it ſelf; but neither of them are to be compared in ſtrength or vertue to the laſt,which receives a mixture of Gold Silver, Antimony and Mercury, for it is an univerſal Remedy, and a kind of true Panacea; inſomuch,that one of the moſt learned, and moſt renowned amongſt Chymical Authors, doth not think amiſs to give it the name of *Phyſical Gold*, or *Medicorum Aurum*, and *the comfort of Patients.* The Doſis of the Lunar Precipitate, is from j *gr.* to xij. They that will make uſe of it alſo for a Preventive of Diſeaſes, when they find themſelves loaded and filled with impure ſeroſities, proceeding from ſuperfluities of digeſtion, may take vj *gr.* thereof faſting, and keep themſelves well covered to expect ſweat; and then after, having taken a good Broth or Bisket dipt in Wine, ſhall cauſe their ſweat to be well wiped off, keeping their Chamber for that whole day; after which they will find themſelves ſo altered, and ſo much lighter, that they may be half better diſpoſed for all functions. This much we had to ſay concerning theſe Precipitates, without addition of Salts and Spirits: but as their Preparation is long and tedious, and that all Artiſts are not capable or fitted for theſe high Operations, it is neceſſary we ſhould give a deſcription of ſome other Precipitates of *Mercury*, which may be made in leſs time, and never fail. It is true, that their vertue is neither ſo great, nor ſo extenſive; they may in a manner be ſubſtituted to the foregoing,provided their Doſis be regulated with more circumſpection, and the uſe thereof duplicated, and more often reiterated.

To make a very excellent fixt Precipitate.

℞ ℥ iij of purified *Mercury*, ℥ ij of yellow Brimſtone, ℥ j ß of Armoniack Salt very pure; mix and pound all in a marble Mortar ſo long, that none of the *Mercury* will more appear, though being rub'd on the palm of the Hand; this mixture put in a Viol or Matraſs in Sand,

and give it a ſublimatory fire; the ſublimation being ended, break the Veſſel, and ſeparate cleanly the ſublimed matter, and pound it again, and mix it with the matter left in the bottom of the Veſſel; then begin to ſublimate again, and thus do four times; but at the fourth time, give it a good fire towards the end, until the bottom of the Matraſs or Viol grows red hot; wherefore the Artiſt muſt leave leſs Sand in the bottom of the Pan then at other times; the matter being cooled, keep that you ſhall find in the bottom of the Veſſel, and preſerve it as a very good Medicament, having the vertue to expel from the body ſound or ſick, all what may be noxious to it, by ſenſible or inſenſible tranſpiration. It is given from iv *gr.* to xx, in Treacle, or extract of Juniper-berries.

To make the Precipitate called Arcanum Corallinum.

℞ ℥ iij of purified Mercury; and having put it in a Matraſs, pour upon it ℥ iv ß of Spirit of Niter, and therein diſſolve it in a ſlow heat of Aſhes; and being all diſſolved, put the Veſſel in Sand under a Chimney; but let the neck of the Matraſs be ſhort, and cut away, to facilitate the vapouring of the Spirit; give it a gradual fire until the *Mercury* be dry, then ceaſe the fire, and let the Matraſs grow cold: but if it be ſhivered or broken, draw the Maſs in it again, and bray it in a marble Mortar; then pour the Pouder in a new Matraſs: but if the firſt be yet whole, you may uſe it to go on in your Operation; for you have no more to do, then to pour again as much Spirit of Niter as before, in one of the ſaid Veſſels, and put it in Aſhes to digeſt, until the Maſs or Pouder be diſſolved; then place it again in Sand, and evaporate the Spirit of Niter to a dry bottom; this done, begin again for the third time with as much Spirit of Niter; and place the Veſſel in Sand after diſſolution, and when you perceive all the Spirit to be evaporated away, encreaſe the fire, and go on until you find the *Mercury* to be changed into a red Pouder; but if you will be more ſecure of your work, bray the maſs you ſhall find in the Matraſs, after the evaporating of the Spirit of Niter, in a marble Mortar, and put the Pouder in a Crucible, which by degrees you ſhall bring to be red hot in an open fire; and when you ſee your Pouder of a fine red coralline colour, and inſipid or taſtleſs, then take off the Crucible from the fire, and let the Pouder cool, which afterwards put in a marble Mortar, and moiſten it with Alkoholiz'd Spirit of Wine, poured on it till it ſwims over half a finger high;

then giving fire to it, exhale it to a dry bottom; thus continuing and repeating ſeven times, and then may you be ſure to have a purgative Precipitate, capable of working many noble effects, and without any corroſion. The Doſis muſt be from ij *gr.* to x, in purgative Extracts, or a little of the Maſs of Angelick Pills. It is a real and true Arcanum againſt the Pox, and all its dependances and evil Symptoms; for it equally and univerſally purges away all what is hurtful and ſuperfluous; wherefore it is good againſt Dropſie, Gout, venemous Plague, Agues, and to reſolve Fluxions and Catarrhs. As for outward Applications, no Remedy ſurpaſſes it for the cure of malignant and corroſive Ulcers; it is alſo very good againſt Itch, Scabs, and all Eruptions in the Skin; if ʒ j, or ℈ ij, be mixed in Pomatum, and the Pulſes in the Head, Wriſt and Feet, be rubbed or anointed therewith.

We ſhall not loſe time here in deſcribing the ſeveral White, Red, Scarlet, Yellow, Green Precipitates, and of ſeveral other colours which are made with Spirit of Niter, *Aqua Regalis*, *Aqua Fortis*, Spirit of Salt, and other Reſolvers, and precipitated with Spirit of Salt, Sea-Water, Spirit of Urine, Urine, Tincture of *Smiris*, or *Emril* Stone, and many other Subſtances, becauſe ſuch Operations are of little Art, and require little of obſervation: wherefore we refer the Artiſt to his own already acquired experience, or the reading of ſuch Authors as have fully treated of *Mercury*, being contented to have taught what is nobleſt and moſt worthy of obſervation in the preparation of Precipitates.

The Sublimation of Mercury.

THis word *Sublimation*, may generally be taken for all kind of Diſtillation, ſince it denotes and ſignifies nothing elſe but the raiſing up of Vapours and Exhalations of the matters upward: but here it is taken in ſomewhat a ſtricter ſenſe; for it ſignifies nothing elſe but the raiſing or lifting up of the Body of *Mercury* into Vapors or Exhalations, which are thickned and condenſated upwards in a hard and compact body, ſticking to the ſides of the Veſſels in which the *Mercury* is put after it is diſſolved, mixt, or as it were united with Salts, Spirits of Brimſtone; we will give ſome few examples of this Work, that our Artiſt may punctually and knowingly put it in practice with all requiſite and due obſervations.

To

To make the Corroſive Sublimate.

℞ ℔ ß of purified *Mercury*; diſſolve it in a Matraſs with ʒ iv of good *Aqua Fortis*; then put it in Sand, and ſoftly evaporate away the *Aqua Fortis* to a dry bottom; then ceaſe the fire, and breaking the Veſſels after they be cold, weigh the Maſs, and having brayed it in a marble Mortar with an equal weight of Vitriol, calcined to whiteneſs, and as much deſiccated Salt, put the mixture in a Cucurbit or Matraſs, or between two earthen Pots, and place either of theſe which you will uſe in Sand near the bottom Plate; if it be a Cucurbit, let it be low, and cover it with its head; if a Matraſs, ſtop it with Paper onely; and if two earthen Pots, let the uppermoſt, which is turned the bottom upwards, have a hole in the middle of it, to evaporate the moiſture of the Salts; and when you ſee white and dry Vapours come away through the ſame, ſtop it alſo with Paper; give it a ſublimatory fire [illegible] degrees, until all the ſubſtance of the *Mercury* be aſcended, which will coagulate into a chryſtalline matter to the top of the Veſſels, containing in it ſelf many of the corroſive Spirits of the Salts you have made uſe of; if you will have a very pure and very corroſive Sublimate; bray that which is ſublimated with ℥ xij more of deſiccated Salt, and ℥ iv of Vitriol calcined to redneſs, and ſublime it for the ſecond time, and continue to the third, with as much deſiccated Salt, without addition of Vitriol; and for the laſt, bray it along again, and ſublimate in Sand in a Viol or Matraſs, and ſo ſhall you have a ſublimate corroſive *Mercury* very pure, and fit not onely to prepare with it the ſublimated ſweet *Mercury*, but to ſerve alſo for many noble Chymical Preparations. The true Artiſt muſt have a care to prepare himſelf the corroſive ſublimate which he intends to uſe, not truſting to that which is ſold at the Grocers, which hath yet too much of impurity, and is ſometimes mixt with Arſenical ſubſtances, becauſe they are cheap in thoſe places where thoſe ſublimates are wont to be prepared in quantity; yet nevertheleſs there are marks to know and chuſe the ſame, which are a ſtinking arſenical ſmell, cleaving ſtrongly to the fingers if you do but touch it, and moreover, the revivification of it; But it is as ſoon done to prepare it your ſelf, to avoid all ſuſpition; wherefore my advice to the Artiſt is, not to truſt at all to that which is bought.

To prepare the Mercury Dulcis, or ſweet Sublimate.

BEfore we deliver any thing of the manner of the work of this Operation, we muſt, as much as lies in our power, give to underſtand how the ſweetening of Corroſives is made, that the Artiſt may the better ratiocinate upon his own Work, and ſo avoid all error, or at leaſt know when he commits any, how to ſatisfie himſelf and others in the reaſon thereof. To this end he muſt conſider, that what cauſes the Mercury to become corroſive, which of his nature is not, are the Spirits of Salt, Vitriol and Niter, employed for the mortification and ſublimation of the ſame: Now as long as thoſe Spirits remain united to the ſubſtance of the Mercury, they are capable and in power to act by reaſon of their Acrimony; but if any thing is offered to corrode and work upon them which doth glut and enervate the ſame, then they loſe that great activity they had, and leave the Mercury inſipid, [illegible] it was before theſe Spirits were united to it. This evidently appears by the revivification of a corroſive Sublimate, with Quick-Lime and Salt of *Mercury*; for theſe Salts which are Alkaly's, do kill and alter the nature of the other Salts which are acid, ſharp and corroſive; and ſo theſe Spirits not being able longer to detain the Mercury, it is raiſed by the action of fire, and returns to its firſt nature of flowing, and inſipid Quick-ſilver in the Recipient: But it is otherwiſe in ſublimation, for the Acrimony of theſe ſpiritualized and recorporified Salts with Mercury, ſpend moſt part of the extent of their activity upon the quick Mercury, which is added to the corroſive ſublimate, for they work upon to mortifie and dead it, but in ſo doing they dead themſelves; and if any portion be yet left behind, the fire doth make an end of driving it away by its action, during the three ſublimations which commonly are made uſe of for the ſweetening of it totally, and it is thus performed.

℞ ℥ xij of a Corroſive Sublimate; bray it in a marble Mortar, and when it is turned to Pouder, add to it, by little and little, ℥ viij of purified Mercury; ſtir and triturate theſe together, until the Mercury be ſo deaded and mortified, that no living Atome of it more doth appear; put the Pouder in a Viol or Matraſs in Sand, with a thumbs thickneſs of Sand onely under the Veſſel, and give it a gradual fire the ſpace of ten hours, or until the Artiſt ſees that the Mercury is wholly aſcended and ſublimated in the top of the Veſſel; then ceaſing the fire, let your Veſſel cool, and break it, to take the Mercury which you ſhall find ſublimated in a compacted and cloſe chryſtalline ſubſtance, that hath almoſt already loſt its corroſive faculty, for the reaſons before alleadged. Bray it, and ſublimate again for the ſecond time; and thus continue a third, and then ſhall you have that they call *Mercurius Dulcis*, or *ſweet Mercury, ſweet Sublimate, the ſweet and mitigated Eagle, the tamed Dragon,* which is that famous *Panchymagog of Quercetanus*; to be ſhort, it is ſo known a Remedy, that it is vain to ſay it is good againſt all Veneral Diſeaſes, and ſafely given to kill Worms in ſmall Children. The Doſis is from *gr.*iv, to ʒ ß, without any danger, but of provoking Salivation, which it doth eaſily; but in caſe it be mixt with Purgatives, as Electuaries, Gellies or Extracts, and the Patient doth take a clear Broth, or a glaſs of Ptiſan, after he hath ſwallowed it, he needs not be any more in fear of this great accident. But the Artiſt muſt note, that neither Mercury, nor any of its Preparations, ought to be brayed in Mortars, or with Peſtles of Metal, becauſe it eaſily ſticks too, and incorporates with Metals. The Opiates or Electuaries alſo, wherein is put the Mercury, muſt not be chewed; but they muſt be ſwallowed in Bolus with Wafel-Bread, or ſome Conſerve of Sweet-meats, that none may remain in the Mouth or Throat, becauſe it is the occaſional cauſe of Salivation; it is alſo for the ſame reaſon that Mercurial Remedies ought not to be diſſolved nor mingled with Liquors to give the Patients to drink, becauſe by reaſon of their weight they ordinarily remain in the bottom of the Cup, or their ſubſtance ſticks and cleaves to the Mouth, Throat, or along the Gullet, and ſo cauſes Salivation.

To ſublimate Cinnabar, or Vermilion.

WEE have deferred above to ſpeak of Mineral Cinnabar, with a purpoſe to mention it in this place; and to ſatisfie the Artificers mind upon this Subject, he muſt know that mineral Cinnabar, is nothing elſe then Mercury or Quick-ſilver, raiſed and ſublimated by internal heat of the Earth in Mines, which made a portion of mineral and embryonated Sulphur, predominant in the ſame Mine to aſcend with it; and according to the purity of the Earth, Stone, Sand or Place where this Mercury and Sulphur are ſublimated and coagulated into Cinnabar; this mixt, is alſo more or leſs pure, as appears by the mineral Cinnabar of *Corinthia*, which is much purer, and abounds much more in Quick-ſilver, then that of *Hungary*, which is much earthlier, and hath more of Stones and Sands, then of Mercury and Sulphur; and the Mercury which may be extracted out of this Cinnabar, is not much purer then that which may be extracted from Artificial Cinnabar, unleſs out of this reſpect, that it proceeds from places which abound with Golden Mines: But if our Artiſt can recover none, let him not be put to a ſtand therefore, provided he takes care to purifie it well; and the firſt purification is made by ſublimation with common Sulphur or Brimſtone, in this manner.

℞ ℔ ß of Sulphur or Brimſtone, and with a moderate fire, melt it in a well glazed earthen Pan; and when it is all well melted, ſqueeze ℥ x of ordinary Quick-ſilver through a Chamoy Leather, to ſeparate the parts of it, and make, as it were, a very ſubtil Rain thereof, which immediately and ſuddenly mingle with a Wooden Peſtle, and incorporate to the melted Brimſtone; and thus continue ſqueezing the Mercury and agitating, until it be all ſwallowed by the Brimſtone; which being grown cold, will turn to a black maſs; which bray and reduce to Pouder between two earthen Pots, exactly luted together mouth to mouth, the uppermoſt having a hole in the middle of the bigneſs of a Quill; place this Pot upon two Bars of Iron, and give it a circular fire, beginning under the Bars by degrees, and ſtop the upper hole of the Pot with a little piece of Paper; and when you perceive the exhaling Vapour to begin to turn from yellow to red, ſticking to the Paper, then ſtop it more exactly, and give it a good ſtrong fire for the ſpace of three or four hours; then ceaſe, and let the Veſſel cool, and you ſhall find in your Pot, the Mercury ſublimated into a red and ſhining lump or maſs, which is that we call *Artificial Cinnabar*; which may be uſed for a Perfume to provoke the fluxing of the Mouth, for it is not fit to be uſed internally; but we have deſcribed it, that the Artiſt may better conceive the manner and action of the ſublimation made naturally in the Earth, and to teach him how to work and prepare it with Sulphur, as well as with Salts.

To prepare the Silvered and Pearled Flowers of Mercury.

ALthough this Operation be long and laborious, it deſerves nevertheleſs our teaching, not only by reaſon of the vertue of theſe mercurial Flowers, but alſo chiefly in reſpect of the *modus faciendi*, which is ſufficient to inſtruct an Artiſt, and lead him to that patience which is required in the Preparation of thoſe *Arcana's* which are extracted from

Mercury, ſo often recommended by our incomparable *Paracelſus*.

To perform then this Operation, ℞ firſt ℔ j of common Salt, and as much Salt-peter; which being reduced to a Pouder, mix with ℔ vj of common Bolus alſo in Pouder, and by little and little moiſten this mixture to knead, and reduce it to a maſs or lump, of a fitting conſiſtency to frame Pellets therewith, which muſt be very well dryed either in the Sun, or upon an Oven where Bread is daily baked. Out of theſe muſt be extracted an *Aqua Regalis*, after the method and way we ſhall teach in the Chapter of *Salts*. Diſſolve ℥ x of well purified Mercury, in ℔ j of this Regal-Water; and draw off again the two parts thereof, or three, in Aſhes; and the Veſſel being cold, take away the Limbeck or Still-head, and you will find the Mercury changed into Chryſtals in the bottom of the Cucurbit, which ſeparate from the Liquor, and edulcorate; then put it in a double or digeſting Veſſel, and pour upon it tartarized Spirit of Wine three fingers high; then luting it very exactly, put it in putrefaction in *B. M.* the ſpace of forty dayes, which is a Philoſophical month. This time being expired, pour all what is in the Veſſel into a Retort, and place it in Sand; then draw off the Spirit of Wine with a very ſlow heat, and when it is all come over the Helm, encreaſe the fire for four or five hours, and ſome part of the Mercury will ſublimate it ſelf, and the other part remain in the bottom of the Retort in the form of a red Precipitate; break the Veſſel, and joyn theſe two ſubſtances together, braying them in a marble Mortar, and the Pouder thereof put in a Matraſs, pouring upon it very good diſtilled Vinegar two fingers high; put this Matraſs in digeſtion in *B. M.* or in Sand or Aſhes, and give it a gradual fire 24 hours, or until the ſubſtance of this Sublimate or Precipitate be diſſolved, which filtrate warm in a glaſs Veſſel very clean, and the Menſtruum will immediately grow clear, and the ſubſtance of the Mercury coagulate into Flowers, which reſemble white, flat and ſhining Silk, Cotton, or flakes of Snow, in colour as fair-ſhining and well poliſhed Silver: ſeparate theſe Flowers with a Silver Spoon, and put them to dry upon filtrating Paper four-fold doubled, without preſſing or cruſhing them, that in drying they loſe not their luſtre and beauty. Continue the ſame diſſolution with freſh Vinegar in the remaining matter; then filtrate and coagulate until it be all converted into Flowers, which are a very excellent purgative Remedy againſt all Venereal Diſeaſes, Worms, intermittent Feavers, Leproſie, and all manner of Scabs and Itch. The Doſis is from ij to viij grains; they muſt be reduced to Pills with Extract of Liquoriſh, to adminiſter ſo to the Patient, giving to drink over it, a glaſs of ſome decoction appropriated to the Diſeaſe, or preſcribing a Broth to be taken immediately.

The Diſtillation of Mercury.

ALmoſt all Authors put the diſtillation of Butter of Antimony in the ſame rank and order as that of Mercury, but with very little ground and reaſon; for though the corroſive ſublimate be made uſe of in this diſtillation, the Butter which proceeds from it, is nothing elſe but a diſſolved and depurated Antimony by the ſaline Spirits, which had coagulated the Mercury into Sublimate; but that which invincibly proves and makes good this truth, is, That when Antimony is deprived of his ſaline Spirits by effuſion of Water, it turns to a Precipitate or Pouder, which is eaſily converted again into Regulus by fuſion with a little Tartar; and that the Sublimate alſo returns into quick Mercury, if the Butter be made with Regulus, or is ſublimated into Cinnabar, if it be done with crude Antimony, becauſe it hath yet in its ſelf its groſs and external Sulphur. But here our intention is only to treat of the diſtillation of Quick-ſilver not prepared before, or after Preparation, and teach to extract from it ſeveral noble Remedies, which are uſed for the cure of the moſt ſtubborn, obſtinate, and radicated diſeaſes.

The Diſtillation of Spirit of Mercury without addition.

THis Operation is harder then the following, becauſe the parts of the Quick-ſilver are not diſcontinued in it, nor opened by the temperation or addition of Salts or Spirits; and moreover, hath received yet no impreſſion from their mixture, which is the cauſe that many do ſet a greater value upon this Spirit, then upon the following, and attribute unto it more vertue and efficacy; it is thus performed.

Firſt, You muſt have a Furnace on which a Crucible muſt be placed, ſo as to riſe half a foot above the Grate of it; upon this Crucible lute an earthen ſtone Cucurbit of one foot and a half high, opened in the top and bottom equally, in the bottom to receive the ſides of the Crucible within, and in the top, to be fitted for a great and capacious glaſs Still-head; there muſt alſo be a ſmall hole of two inches ſquare above the ſide, to which the Crucible is joyned, having a very exact ſtopple fitted to it, that by the ſame the Mercury may be thrown into the Crucible: the joints both of the Crucible and Cucurbit, where they meet in the bottom, muſt be exactly luted, with a Lute not ſubject to crack, and the joynts of the Cucurbit and Still-head with a Bladder and Whites of Eggs; this done, give your fire gently, ſo as to heat your Veſſel by degrees, and encreaſe it until the bottom of the Crucible be turned red; then, having at hand purified Mercury, pour about ℥ ij at every time into the Crucible, by the ſquare hole of the Cucurbit; which ſtop without delay, and the Mercury will paſs through the Helm in Vapours, which partly will turn again into the body of flowing Mercury, and partly into a clear Liquor, but in ſmall quantity; proceed thus pouring and putting new Mercury, until you have enough of this Spirit for your uſe. Note, that you may change the Recipient, and ſubſtitute another in the place to take away from it the diſtilled Liquor, and ſeparate the Quick-ſilver to put in your Diſtillation, being as good as the other that never was yet uſed. Rectifie this Spirit in Balneo *M.* or Aſhes, and keep it for your uſe. It is a ſearcher, penetrating through all the Body, and driving away all impurities from it, either by ſenſible or undiſcernable tranſpiration, and chiefly by Sweats. The malignant and foul Ulcers may alſo be waſhed with it, chiefly thoſe that proceed from the venom and infection of the Pox: We ſhall make a more exact application of the ſame again, after we have delivered the deſcription of the two following Spirits.

To prepare the White and Diaphoretical Spirit of Mercury.

ALthough ſome give the name of *Oil* to theſe Preparations, it is improperly, ſince nothing can lawfully be called Oil, but what is fat and inflammable, but not any aqueous ſubſtance; for which cauſe we have rather choſen to keep the name of Spirit, as beſt expreſſing the nature of the thing: This Spirit is thus prepared.

Take ℔ ij of prepared corroſive Sublimate, ſuch as we have taught to make before; reduce it to a very ſubtil Pouder upon a marble Stone, and mix it with three times as much red Clay, and knead or work it with a little of diſtilled Rain-Water into a lump, whereof you may make Pellets fit to paſs through the neck of a Retort; cauſe them wholly to dry in the ſhade, and then put them in the Retort; to which, after you have placed it in Sand, fit a capacious and well luted Recipient: but note, that the neck of the Retort muſt be above an inch diameter in the mouth, both to give way to the Pellets to paſs, and alſo to facilitate the ſucceſs of the

Operation, which would be endangered, if the matter by ſublimation did ſtop the neck of the Retort, before all the aqueous and watery Vapours are come forth, which might cauſe the Retort, and perhaps alſo the Recipient to break. The Lute being very dry, give it a gradual fire the ſpace of two or three hours, and there will come forth an excellent Spirit, which put by it ſelf; and if any Mercury be ſublimated, incorporate and work it again with new red Clay, and proceed as before, until you have turned all this Sublimate into Spirit,which mix altogether; then rectifie and keep for uſe in a well ſtopt Viol. The Vertues and Doſis we will deliver in the following Preparation.

To make the Red and Diaphoretical Spirit of Mercury.

THis Spirit being of more toyl in the Preparation then the former, ſo hath it alſo much more of Vertue; and I ſay, that in caſe there ſhould be any danger in the uſe of theſe Remedies, there ſhould be much leſs even however in this whereof we are about now to teach the Preparation; becauſe the *Mars*, or Iron, which is made uſe of, doth abate and ſlacken very mnch the acrimony and ſharpneſs of the Spirits of the Sublimate: But there is no doubt at all to be made for the ſafe uſe and goodneſs of theſe excellent Medicines, which are corrected by fire, and given in ſo ſmall a Doſis, by reaſon of their ſubtil and quick penetration, ſo as no body ought to fear the effects thereof,which can be but uſeful and commendable. It is thus performed.

℞ ℔ j of good corroſive Sublimate,and as much of filings of Needles, very pure, clean and ſmall; grind the Sublimate very well, then add the filings to it; and this mixture put in a Cellar, or ſome other cool place, upon a Glaſs Table, that hath an edge and a ſmall Conduit in it, under which a Diſh is to be placed, that ſhall receive a yellow Liquor proceeding from the diſſolution of theſe two ſubſtances, which you are to preſerve carefully; and when it is all done, take the remainder, and having put it in a glaſs Cucurbit; pour upon it diſtilled Rain-Water half a foot high to draw the Salt thereof; digeſt it in Aſhes, and ſtir often the matter, and after three dayes filtrate the diſſolution and evaporate into Salt, which diſſolve; again filtrate, evaporate and chryſtallize until it be very pure; then dry it, and make it into Pouder, which mingle with the yellow Liquor kept before, and it will grow as red as Saffron; pour it all into a low glaſs Cucurbit; upon which fit a Still-head with a ſhort and big noſe, to which having fitted a proportionate Recipient, and luted the Joints, make the diſtillation in Sand, giving fire by degrees: there will come forth firſt a Phlegm, and when you ſee that yellow Vapours begin to appear, change your Recipient, and encreaſe the fire; and this yellow Vapour will condenſate it ſelf into a red Liquor, which will partly fall into the Recipient, and the remainder which will be too thick, ſhall ſtick to the Body and Noſe of the Limbeck; this done, let the Veſſels cool, and take away the Still-head, to which with the Phlegm that came forth at firſt from the ſides and brims of the Cucurbit, where ſome part of this red ſubſtance is ſtuck faſt; pour again upon its own *Caput Mortuum* in the bottom of the Cucurbit, in caſe it be not broken; if ſo, then take another: but leave what is in the Limbeck and its Noſe, becauſe after you ſhall have luted the Veſſels, and begun your fire to reiterate the diſtillation, as ſoon as the Limbeck feels the heat, and that the Vapours begin to aſcend, that which is in the Still-Head will reſolve it ſelf into Liquor, and flow in the Recipient; as ſoon as all the red Liquor is aſcended and come over the Helm, change your Recipient to encreaſe the Phlegm, after which more red Liquor will yet aſcend, which receive by it ſelf, and joyn to the other; reiterate theſe diſtillations and cohobations until no more of red Liquor will aſcend. Then put it all in a double or circulatory Veſſel, and pour upon it Alkohol of Wine three fingers high; digeſt and circulate it in a vaporous Balneo the ſpace of three weeks; after which take away the Blind-head, and put a Stil in lieu of it, and draw off the Spirit of Wine in the gentle heat of *B. M.* keeping the red Spirit remaining in a ſtrong Viol well ſtopt, as one of the beſt Remedies prepared from Mercury. Both theſe Spirits are of a very great and commendable uſe in Phyſick; but that which is red, is yet much more to be eſteemed, and above any of the other. All of them do equally expel and drive away by ſweat whatſoever may be hurtful or offenſive to the body, and diſturb the œconomy of life and health; they cure alſo ſeveral Diſeaſes, upon which other Remedies could have no power. It may be truly ſaid, that theſe Spirits, but chiefly the red, are the true Specificks againſt inveterate Pocks, which may be tryed by their uſe; for the Puſtles or Pimples vaniſh away of themſelves, the Nodus's and hardneſſes inſenſibly decay; night-pains and aches do ceaſe, and the putrid, noiſom and open Ulcers are cleanſed and conſolidated without application of any external Remedy. The Doſis muſt be from j drop to iv, at the moſt in Theriacal-Water, or Camphyr'd-Theriacal-Spirit, Spirit of Life of *Paracelſus*, Spirit of *Guaiacum*, Spirit of *Diatrion*,

trion, or *Mixtum Simplex* of the ſame *Paracelſus*, or even in Tincture of Saſſafras and China-Root made with White-Wine. I doubt not but moſt who ſhall read this, may be of a different ſentiment from mine; believing that I produce impoſſibilities upon the Stage of Chymiſtry, and follow the tract of all the reſt, by attributing ſo many vertues to the Preparations of *Mercury* turn'd into Spirit: but I am not at all amazed at it; for thoſe who paſs this Cenſure and Judgment, cannot certainly be acquainted with the ſubtil and fermentative action of *Mercury*, and with thoſe Remedies it yeelds. What change and alteration doth it not produce in Mans Body, being onely applyed outwardly in Frictions, Perfumes and Plaiſters? What doth it not perform in Baths? What ſtrange effects doth it not produce in Pills? And all this, whilſt yet cloyed with a Body, or only altered by the intervention of Salts and Spirits; What then may not be hoped from it, when it is brought to a further digeſtion, and turned to a liquid ſpirituous ſubſtance which may be mixed with potable Liquors! for then it is capable to be volatiliz'd by natural heat, and its vertue brought from the Center to the Circumference, and ſo penetrates all parts, and carries along with it by ſweat, whatſoever impurities and evil humours it meets with, whether a matter ripe for Diſeaſes, or only a ſuperfluity of digeſtions. But to ſtop the mouths of the Detractors and obſtinate unbelievees, I find my ſelf obliged to relate here the Hiſtory of a Perſon eminent both in condition and place, who is yet living; having been actually blind in former time, and now cured by a Mercurial Remedy, yet in Pouder, and not brought to the perfection of a Spirit; and that which is more to be conſidered in this cure, is, that there was no other Remedy us'd but of one grain and half of this prepared Mercury, blown with a Quill in the Noſtrils, which in a very ſhort time did produce ſurpriſing effects! for his Head ſwell'd in an extraordinary manner; then did he ſpit, drivel, ſhed tears, blow his noſe, ſneeze, vomit, piſs, had copious and large Stools, and ſweated likewiſe, and all this in leſs then eight hours; after which thoſe violent Symptoms did ceaſe, and relent by degrees. But that which is more wonderful, is, that the very next day he began to ſee, though ſomewhat confuſedly, and from day to day after that, began to diſtinguiſh Objects, and finally was totally cured, and enjoyes now one of the beſt and ſteadieſt eye-ſights a man can have, and ſince that hath performed many remarkable ſervices to the Crown of *France*. The ſame Perſon which cured him, did alſo cure the moſt deſperate Pocks with the ſame Remedy, given in the ſame quantity, and blown in the Noſtrils. Where is now (I beſeech you) that Medicine that ſhall produce the like effects, even at a great diſtance? This Relation is ſo true, that to juſtifie it, I can produce many a witneſs of Credit and Repute; wherefore I think no body ſhall judge it more ſtrange, that I ſhould attribute to the foregoing Preparations, Vertues and Effects of far inferiour difficulty and worth; which makes me conclude here in a profound admiration of the supream Wiſdom, and with ſcorn of humane ignorance, ſaying, That the Age of Man is too ſhort to go through the exact Anatomy of Mercury, and draw all the noble Remedies which God and Nature have placed in this Heteroclit and neutral Mixt, which hath not its like in all created Subſtances, or ſublunary Beings.

To make a Sweet Oil of Mercury.

WEE have yet two diſtinctions more of Mercury to deſcribe, becauſe the proceſſes of it are differing from the reſt, and the Menſtruums alſo, that our Artiſt thereby may the better be informed, and more exactly conceive whatſoever the moſt learned and experimented amongſt ancient Writers have left upon Record, for the preparation of the great Arcana's. The firſt is made thus.

℞ q. v of corroſive Sublimate made with Salt, Vitriol and Salt-peter, and thrice ſublimated with new Vitriol, and Salt that hath been in fluxion or fuſion, and taking at every time, half of the *Caput Mortuum* remaining after ſublimation, and half of new matter. Put this Sublimate in ſubtil Pouder, and pour upon it very good diſtilled Vinegar three fingers high; digeſt and diſſolve them together; then ſeparate the diſſolution, and reaffund new Vinegar, thus continue until all the Sublimate be diſſolved; put all theſe diſſolutions in a Cucurbit, and draw off the Menſtruum again in a Sand-fire, well graduated to a dry bottom: then take off the matter, and having put it in a double digeſting Glaſs, pour upon it Spirit of Wine very much alkoholiz'd; ſtop the Glaſs with its Blind-head, and lute it exactly; then put it in digeſtion in a vaporous Balneo the ſpace of three weeks, or until the matter be opened, and becomes viſcous and clammy: then draw off the Spirit of Wine in a heat proportionate to its nature: this done, put the Veſſel in Sand, and diſtil it with the higheſt degree of fire which it is capable to receive, and at laſt it will yeeld a Liquor as white as Milk: cohobate that which is come forth upon the matter remaining in the bottom, and reiterate the diſtillation, and you ſhall have a ſweet and fragrant Oil, void of all corroſive quality.

They that know the action and reaction of Salts and Spirits, ſhall not find this change from corroſive to ſweet impoſſible; for theſe mixtures, theſe actions, theſe digeſtions, theſe diſſolutions and diſtillations, do produce new beings, which the Artiſt ſhould never have hoped for, as very well ſaith the moſt profound Philoſopher and Phyſitian, *Van Helmont. Diſtillatio parit novum ens.*

This Oil or Liquor cures all internal Ulcers, and drives away by Sweat all impurities which are the ſpring of Diſeaſes; above all, it is an admirable Specifick againſt Ulcers in the Throat, thoſe of the Reins and the Bladder. The Doſis may be from j drop to three in ſome appropriated Liquor. But if the Artiſt will perfect a true Magiſtery or Elixir of Mercury, let him digeſt the Calx of Gold well opened in this Oyl, during the ſpace of ſix whole weeks in a circulatory Veſſel, and he will have an ineſtimable Remedy, much exalted in vertue; and the Doſis whereof exceeds not from half a grain to two for the moſt.

To prepare the Aſtrum Mercurij, *or Star of Mercury.*

℞ ℔ j ß of quick Mercury, ſeven times ſublimated with Salt, Saltpeter and Vitriol, and as many times revivified with Quick-Lime; put it in a Cucurbit, and pour upon it ℥ xij of very good Spirit of Niter; cover the Cucurbit with its Blind-head, and let them diſſolve in the ſlow heat of Aſhes, if need be, or place the Cucurbit in Sand after the total diſſolution of the Mercury, and draw the Spirit from it to a dry bottom: then reduce to Pouder the remaining lump on a marble Mortar; this Pouder put in a new Cucurbit, pour upon it very good Vinegar four inches high, cover the Cucurbit with its Blind-head, and put it in Sand; let the matter digeſt and boil the ſpace of 24 hours, then taking off the Blind-head, put a Still in the place, and draw off the Vinegar to a dry bottom, and thus draw it three times; Beat the lump to Pouder, and diſtil ſeven times upon it diſtilled Rain-Water, or ſo long till the lump hath no taſte of the Vinegar left at all; then beat it again to Pouder, and put it to digeſt, for the laſt time in a double Veſſel, with its equal weight of true Alkohol of Wine; cover it with the Blind-head, and being well luted, place it in a Vaporous Balneo with ſhred Straw, and ſo digeſt it during ſix weeks in an equal and continued heat. This done, pour all the matter into a Retort, and diſtil it in Aſhes mingled with Sand in a graduate heat, until even by encreaſing of the fire, nothing more will come forth; open the Veſſels after they are cooled, and pour what you find in the Recipient into a Cucurbit; draw off the Spirit of Wine in a ſlow heat of *B. M.* and you ſhall find in the bottom of the Veſſel, an Oil or precious Liquor of a very good ſmell, which is called *Aſtrum Mercurij*, or the *Star of Mercury*, not to be given to ſick Perſons, but from j drop to iij in appropriated Liquors. We ſhall relate the vertues of it after we have taught the extraction of Salt of Mercury, becauſe it hath the ſame properties and efficacy.

To make the Salt of Mercury.

TAke what was left after the diſtillation of *Aſtrum Mercurij*, put it in a double Veſſel, and pour upon it ſome of the ſaid *Aſtrum*, or *Star of Mercury*; put them together in digeſtion in Aſhes to a moderate heat the ſpace of three dayes; after which ſeparate the extraction by decantation, that no impurity may go along with it; pour upon it a good quantity of very ſubtil Spirit of Wine, circulate them together the ſpace of xv dayes in a well ſtopt Veſſel; after that draw off the Spirit of Wine in *B. M.* and cauſe the Oil to aſcend in Aſhes, and you ſhall have the precious Salt of Mercury in the bottom of the Veſſel; keep both theſe excellent and noble Remedies for uſe. They are both a very ſecret and ſpecifick Remedy to cleanſe, and rectifie the whole maſs of the Blood: upon which account they are wonderful for the cure of Leproſie and Pocks. They alſo cure all manner of never ſo malignant and inveterate Ulcers; and carry away and cleanſe eaſily all manner of Scurf in the Head, Scab and Itch. The Doſis of the Salt is equal with that of the Liquor. Their working is by tranſpiration and ſweat. We will not ſpeak of the Liquation or Reſolution of Mercury, though we did promiſe above to give an Example thereof, becauſe this Operation hath an affinity and dependance on the two laſt diſtillations by us deſcribed: wherefore nothing remains for us to treat of, but of the Extraction whereby the Sulphur of Mercury may be procured: for we have ſhewed above how the Salt thereof is to be made.

Tincture of Mercury, which is called the Sulphur *thereof.*

℞ j p. of red Precipitate made with Spirit of Niter; bray it in a Mortar with ij p. of deſiccated Salt, and iij p. of Vitriol deſiccated alſo to whiteneſs; put this mixture in a Matraſs, and ſublime it in Sand, with a ſtrong and violent fire towards the end. Put this Sublimate in a double or digeſting Veſſel, pouring upon it good diſtilled Vinegar four fingers high; cover it with its Blind-head, and put it in Aſhes to digeſt the ſpace of three weeks, and the Vinegar will take a yellow Tincture; this draw off by decanting the Veſſel, and put new Vinegar in the place; and thus proceed extracting and digeſting with new Menſtruum, until it takes colour no more. Filtrate all theſe Tinctures, and pour them in a Cucurbit; which place in Sand, and by diſtillation, draw off all the Liquor to a dry bottom; and in the bottom of the Cucurbit you ſhall find the Sulphur of Mercury in a red Pouder, which keep in a Glaſs Viol for uſe. *Paracelſus* gives very great Elogiums and commendations to this Sulphur, and attributes unto it the vertue of curing the Gout, Epilepſie, and the great Pocks radically, and without any fear of relapſe: the ſenſible effects thereof, are Urines and Sweat; otherwiſe it works by a gentle, natural and inſenſible tranſpiration. The Doſis may be from j *gr.* to iij, in ſome Conſerve or Cordial Confection, or even in Extract of Juniper.

Though we have already warned before all Chymical Artiſts, in the Theorical part of this Treatiſe, not to make uſe of any Chymical Remedies, unleſs they have prepared them themſelves, or be very well acquainted with, and dare truſt to the experience, knowledge and conſcience of thoſe from whoſe hands they will take them. We think our ſelves nevertheleſs yet obliged to ſay ſomewhat more of this matter here, chiefly by reaſon of thoſe pernicious accidents we have ſeen to happen to ſeveral perſons of all conditions, for having truſted, and having admitted Mercurial Remedies not rightly prepared; it is therefore much ſafer to abſtain from their uſe and adminiſtration, then to hazard a repenting for all your life, either in your own Perſon, or of thoſe which you ſhall expoſe to danger and torment by an ill prepared and dangerous Remedy, which makes me to adviſe and counſel thoſe, that are not yet ſufficiently inſtructed in the Theorical and Practical part of Chymiſtry, not to venture upon the preparation of the great Mercurial Remedies, until they have attained to a ſufficient and exact knowledge of the materials they are to handle and work upon; and to a happy and long experience of the goodneſs of Remedies by them prepared: And ſince we have the injunction of our great Maſter *Hippocrates*, to make our experiments upon a vile ſubject, even in trying the vertue of a Root or Plant; how much more are we to be circumſpect, when we go about to uſe Remedies extracted from Metals or Minerals, when their vertue and activity is not yet come fully to our diſcovery and knowledge. Here then muſt we proceed warily, and ſound the depth before we enter this Foord, leſt we forfeit our Reputation, and endanger the life of the Patient. For although the Proceſſes and Operations ſeem to be plainly delivered, and eaſie enough to practiſe; yet the ill choice of materials, the action of the fire, the want of Veſſels, ſome miſtake or inadvertency, ſome neglect or impatience of the Artiſt, familiar enough to the *French* Nation; do very much alter the nature of things, and imprints in it new Faculties, and quite different from thoſe we do expect. Let then every body work with knowledge, prudence and circumſpection, with Conſcience and very long Patience, if they will attain to the poſſeſſion of thoſe great Remedies, which Mercury and Antimony, of which laſt we are now to treat of, do yeeld.

Of Antimony, and its Chymical Preparation.

AS Antimony is the ſtumbling-ſtone of many of thoſe which profeſs Phyſick, and they that are not acquainted with it, will traduce it as the vain Idol of Chymiſts and Chymiſtry; ſo muſt we with all poſſible endeavour make it appear, that it is with very juſt reaſon and good purpoſe, that Artiſts have Antimony in eſteem, ſince it is grounded upon their knowledge of its nature, they having not, as the Traducers and Diffamators thereof do, been contented with the Rind and ſuperficial examination of the ſame; but contrariwiſe, having opened and anatomized it, to extract thoſe wonderful Remedies which daily do produce ſuch noble effects, to the great praiſe and exaltation of Chymiſtry, and the diſcredit of thoſe who publickly profeſs their defaming by Invectives, and ridiculous calumnies againſt ſuch as daily uſe it with Skill and Knowledge, Order and Method, and conſequently with deſired ſucceſs.

But to clear more this truth which we have laid, we muſt in few words declare the nature of Antimony, and of what ſubſtance it is made of, to make it obvious and plain, and evident to the leaſt capacity, that thoſe that have an averſion and hatred for it, do onely condemn it for want of true knowledge, both of the ſubſtance and firſt preparation thereof as we will declare in the ſequel of this Diſcourſe.

Antimony then, is nothing elſe but a Marcaſite, mean or middle Mineral, which Nature hath deſtined to a metallick production; but hath fainted in the way, for want of not having in it ſelf the neceſſary diſpoſitions to attain to that perfection; or, becauſe it was prematurely ſnatcht away and torn off from its Matrix, as an unripe Fruit pluckt off from the Tree; or finally, by reaſon of the terreſtrial impurity of its mixture, and the diſproportion and indigeſtion of its Principles.

But to let the Reader better underſtand, this we ſay, let the Artiſt know, that Antimony doth firſt of all conſiſt of a mineral Sulphur, partly very pure, and anſwering the nature of that of Gold, whoſe Foundation is in its redneſs, and is fixt; and it is in the Center of this Solar Sulphur that all the wonders of Antimony are placed; the other part of this Sulphur is impure, diſſipable by fire, and volatile as common Brimſtone; and to this Sulphur are commonly referred and attributed the violent and raging Operations, when it is not well and duly corrected, or ill and negligently ſeparated. Secondly, This Mineral is compounded of a metallick Mercury in abundance, which is nevertheleſs indigeſted and ſuliginous; but yet more concocted and coagulated then Quick-ſilver, becauſe it participates of the Saturnine Nature: finally, The third conſtituting part or principle of our Antimony, is a groſs and earthly ſubſtance which it holds from its Matrix, containing very little of ſenſible Salt, though Salt was the firſt cauſe of its production: But the nature of it is changed, by reaſon of the ſeveral alterations and diſguiſes it hath ſuffered by the Concoction and Digeſtion of its Centrical Fire.

By which deſription of Antimony, and its conſtituting parts, is plain to be ſeen, that it is nothing elſe but a gathering and conjunction of Vitriol, Sulphur and Mercury of the nature of Lead met together, and that by conſequence it cannot be dangerous or condemnable in it ſelf, ſince every day theſe three ſubſtances are uſed by themſelves, and taken apart in Phyſick, either as they grow naturally, or prepared; And wherefore then ſhould not crude and prepared Antimony be made uſe of alſo? But it will be objected unto me, That the moſt famous and celebrated Authors which have written of Antimony, call it a *Poyſon*, and ſay, That it doth participate of ſome mixture of Realgar and Arſenick. To which we anſwer, That Lead, Quick-ſilver and Brimſtone, participate alſo of the ſame mixture, and yet are not baniſhed from the commerce of Phyſick; ſince even Realgar and Arſenick are made uſe of, after the malignancy of their Salt and Sulphur hath been corrected by the miniſtery of fire, and of the Spirits that are capable of this Operation, ſo that they may be inwardly adminiſtred, ſupplying us alſo with the beſt Topical Remedies againſt all dangerous and malignant Ulcers. But it is quite otherwiſe of Antimony, which daily is adminiſtred by the mouth wholly raw, and without any accident even to ſucking Children: and moreover, made to boyl in the weight of ℔ ß in Decoctions againſt the Pocks, and alſo put in cold infuſion of Water to open the Body, and remove Obſtructions in the Entrails. Let then our Artiſt know, that when ever Ancient or Modern Authors which have treated concerning Antimony, have ſaid it was Poyſon; it is to be underſtood comparatively between the common preparations of Antimony, not yet ſufficiently corrected, and ſo conſequently cauſing violent Vomits and Stools, with thoſe they deſcribe that are harmleſs and of no danger, but which only do ſtrengthen Nature, and help it to expel inſenſibly whatever is noxious and hurtful to it. Wherefore let us conclude this preliminary Diſcourſe of Antimony, by the words which *Zwelferus* hath to this purpoſe, in the Appendix inſerted to the end of his Notes, upon the *Pharmacopea* of *Ausburg*, in praiſe of this noble Mineral, and againſt the unlearned and ignorant deſpiſers thereof. *Cum ſtibij vel Antimonij nomen apud aliquos artis pulcherrimæ oſores, preſertim ignorantes, tam malè audiat, ut qui ſolummodo ore illud excidere permittit, mox ex medentium cœtu proſcriptus ad veneficos amandetur; quia tamen hoc de Antimonio judicium, non in alia officina, quam celebri ad Lunæ creſcentis & de creſcentis mutabilitatem tornati excuditur; & vix alius de eo magis perverſe & perfricta fronte loquitur, quam qui minimam ejus habet cognitionem; Idcirco nullo canum ſimilium hoc ſidus allatrantium, convitio a veri tramite dimotus, hoc in præſens aſſerere non erubeſco: Antimonium vere unam & principalem eſſe columnam Univerſæ Medicinæ; Quipe ex eo tanquam Proteo, diverſis duntaxat præparationibus, diverſarum operationum medicamenta ſaluberrima, ut pote antiloimica, antivenerea, diaphoretica, purgantia & vomitoria blanda, ſanguinem univerſum mundificantia, vulneraria, pectoralia, imo univerſale medicamen ſeu Panacea ipſa, erui poſſunt. Nec conſtat ex vegetabilibus unicum emeticum, quod minore cum periculo exhibere poſſit, quam Antimonium dextre & debite præparatum; nunquam enim tormina ventris, Hypercatharſin, fluxumque*

[illegible]

nimium colliquantium cauſabit, etiamſi aqua frigida ſuperbibatur. We ſhould think it ſuperfluous to ſay any more of it; wherefore we will come now to the choice of Antimony, and the ſeveral denominations given unto it, by thoſe that would keep ſecret the Myſteries, and hide the Preparation thereof, that it may be a Key to the Artiſt for underſtanding other Ænigma's and dark Ridles, and explicating of their myſterious Hieroglyphicks.

Chymical Philoſophers do characterize this Mineral with a Figure repreſenting the round World, and a croſs on the top thereof thus ♁ to denote, that as the myſtery of the Croſe doth purifie, and heal the Soul from all ſpiritual filth and Leproſie; ſo Antimony and its Remedies well and duly prepared, do cleanſe and free the Body from all impurities, which breed and entertain the Diſeaſes whereby it is tormented and afflicted. They call it by ſeveral *ænigmatical names*, as the *Wolf*, becauſe it conſumes and devours all Metals, Gold excepted; Others name it *the Proteus*, becauſe it turns it ſelf into all Forms, and takes all manner of Colours, by the aſſiſtance of *Vulcan*, which is the Fire; Others call it *the Root of Metals*, both becauſe it is found often near their Mines, and that many are of Opinion it is the rudiment and principle of Metals: It is moreover denominated *the ſacred Lead, the Lead of the Philoſophers*, and *of the Wiſe*, becauſe ſo it hath ſome analogy and affinity to the nature of *Saturn*, which devoured his Children as he devours Metals; and becauſe alſo ſome do take it for the ſubject matter of the great Work of Philoſophers, and of their Quinteſſence: *Baſilius Valentinus*, calls it *the Eaſtern Lion*; *Paracelſus, the Red Lion*; and *Glauber* deſcribes it as *the firſt Being of Gold.*

All Authors are agreed that the *Hungarian Antimony*, or *Tranſilvanian*, is to be choſen for the nobleſt and higheſt Operations, becauſe it is the pureſt, and participates more of the Solar nature, and ſo its internal Sulphur is much more exalted. It is found nevertheleſs in many other places, and chiefly in *Germany*, and *France* hath ſome which is not altogether deſpicable. So that thoſe which cannot come at that Antimony which is digged about Golden Mines, muſt take and chuſe in lieu of it to ſupply their work, a clear, pure and ſhining Antimony, with clear and bright faces or glittering flawes: If it be Mineral, mixt with a kind of changing and playing colour, as that in Doves Necks, or the changes of the Opal or the Rain-bow, which are all ſigns of the predominancy and abundance of its Sulphur: but if it be common Antimony that hath been melted already, that which has the longeſt ſtreaks, or ſhining and ſparkling lines, or flawes with the ſame notes of colour, which we have recommended in the other, is to be preferred. They that will try it further to be ſurer of it, muſt take ℥ j of Antimony made into very ſmall Pouder, and temper or ſprinkle it with very good Spirit of Vinegar; then let it dry or evaporate in the fire upon a ſmall Iron Plate, or ſome ſmall piece of an earthen Pot, with this caution neverthelefs, neither to flow, or melt in the fire: and if the Pouder remains of a red colour, it is an aſſured ſign of the goodneſs and abundance of its Sulphur. But we hold the *beſt tryal of Antimony*, to be its reduction into Regulus by the help of *Mars* and Niter, without any mixture of Tartar, by reaſon of its Alkali which diſſolves Sulphurs: for that which yeelds the greateſt quantity of Regulus, and the pureſt, is the beſt, ſince the Regulus is nothing elſe but a well purified Antimony.

The general Preparations of Antimony.

Before we come to the particular Operations which are made upon Antimony, we thought it neceſſary to give firſt a general Idea of ſuch Preparations as are made upon this noble Mineral; the Harveſt of them being ſo great, that to deſcribe what Modern and Antient Authors have delivered of it, and what by our experience we are confirmed in, would require endleſs Volumns, the Vertues of Antimony being bottomleſs and innumerable, as by the ſequel we ſhall make it appear. We ſhall then reſtrain and couch up our ſelves according to our wonted cuſtome, with ſome Examples of each of the moſt general Operations, by which the Artiſt will be guided and ruled to perform ſuch others, as the neceſſity of Patients, or his own curioſity ſhall prompt him to undertake, that he may not come ſhort of giving or receiving the ſatisfaction he looks for.

The general Preparations then made upon Antimony, are; firſt, *Calcination*; ſecondly, *Sublimation*; thirdly, *Diſtillation*; fourthly, *Liquation* or *Reſolution*; fifthly, *Extraction*; ſixthly, *Infuſion*; ſeventhly, *Salification*; ſome do add in the eighth place, *Mercurification*: But we will omit that, having made a hundred ſucceſleſs tryals, by which we could never be convinced of the truth thereof; wherefore we abſtain from it upon the ſame account, and for the ſame reaſon we have hinted, ſpeaking of the Mercury of Metals; and further, knowing full well that *Paracelſus* and others, underſtand nothing elſe by the *Mercury of Anti-*

mony, then its well prepared *Regulus*, without any diminution or loſs of its Solar or Central Sulphur, though we deny not the poſſibility thereof: But we will impoſe upon no body,nor be the cauſe of any loſs of time upon Proceſſes and Operations that have never, nor never ſhall hit or ſucceed right. The *Calcination* is two-fold,dry and moiſt; the dry yeelds the Glaſs, Crocus or Saffron, Diaphoretick Remedies and Regulus; the moiſt gives the Precipitates. *Sublimation* makes the Flowers, Cinnabar or Vermilion. The *Diſtillation* draws Vinegars,Oils and Spirits. *Extraction* communicates Sulphurs and Tinctures. *Infuſion* gives emetical Wines, and Ophthalmical Waters; and the *Salification*, Salt.

The particular Preparations of Antimony, and how the Glaſs of Antimony is to be made by plain Diſtillation.

THere are ſo many Deſcriptions of the manner of preparing the Glaſs of Antimony, that Artiſts are confounded in this particular, and hardly know how to chuſe the beſt: but as we are ſufficiently inſtructed, both by Theory and Practice, that the beſt is that which is made without addition or mixture; we will exemplifie and propound for a pattern the Preparation of this, becauſe whoſoever can perform it exactly, ſhall never be put to ſeek in executing the others, the melting, clarification, and diaphaneity whereof is much eaſier, by reaſon of the union of ſeveral Salts, by which the fluxion is facilitated, and becomes both quicker and cleanlier; this Glaſs without addition is thus made.

Take well choſen Antimony, and being made into very ſmall Pouder, calcine it in a very large and capacious earthen Diſh, not glazed or varniſhed, upon a ſlow fire, ſtirring continually with an Iron Spatula or Slice; this Calcination is to be made in a place where the Air may freely paſs through; and the Artiſt muſt ſtand above the Wind, that he may receive no inconveniency by the Vapours exhaling from the pure Sulphur of Antimony, nor oppreſs or ſuffocate his Breaſt; above all things, great care muſt be had not to make too big a fire, otherwiſe the excrementitious moiſture being too ſuddenly driven away, the melting and vitrification thereof would be hindered; after you have kept this Antimony three or four hours upon the fire, and that you ſhall ſee it begin to crumble it ſelf, and gather up together, draw the Veſſel off from the fire, and pour the matter upon a Porphyry Stone, whereafter it is grown cold, you may reduce it into Alkohol; then begin anew to calcine, with a little more fire then at the firſt time; and thus proceed three or four times, encreaſing ſtill the fire at every time that you bray your Antimony, and you will have an Antimonial Calx of a whitiſh gray, which you may uſe to make your Glaſs therewith; as alſo to prepare an excellent Diaphoretick againſt the Plague and malignant Feavers: To attain to this, reverberate part of this Calx in a Crucible in open fire, until from white it turns to yellow; and if the Calx do happen to crumble during the Reverberation, take it immediately off from the fire, and bray it again; and thus go on until all the external Sulphur be evaporated, and the internal begins to appear and manifeſt its ſelf by its yellow colour, which it yeelds when it is come to this paſs; put it in a Matraſs, and pour upon it very good Spirit of Wine, and digeſt them together the ſpace of fifteen dayes; which being over, kindle of this Spirit ſeven times upon your Diaphoretick to fix it the better. The Doſis muſt be from iv *gr.* to xij, in ſome Conſerve of Marigold-flowers.

But to perform the Vitrification, take ℔ ß of the prepared Calx, and add to it ℥ ß of crude Antimony in Pouder, to facilitate and advance the Fuſion; which you muſt make in a Wind-Furnace in a Crucible of very ſtrong matter, capable to reſiſt the fire, and laſt in it; and when you ſhall perceive your matter in the Crucible to flow clear and bright, try with a ſmall ſharp Iron, which may be clean, and expoſe it between your ſight and the light; and if it be red or tranſparent as a Granate or Ruby, pour it into a Braſs Baſon, or Braſs dreſſing Plate well ſcoured, and made warm before the Glaſs be thrown upon it; and thus ſhall you have a pure Glaſs, red and tranſparent, which may be uſed for many noble and uſeful Preparations, which we will place in their Rank and Order, according to the Rank and Claſis of their general Preparation, whereof an Artiſt muſt never be unprovided of it.

To make the Crocus, or Antimonial Saffron, which is called Crocus Metallorum.

WEE will give three deſcriptions of this Operation; the firſt more ſlight, common and eaſie; the other ſomething more intricate; and the third more laborious: that as the Work and Preparation of it is various, and for different Reaſons, ſo the Artiſt may be inſtructed in the one and the other, to be the more capable thereby to ſatisfie himſelf and others.

The firſt Crocus Metallorum.

WEE have in general recommended to the Artiſt, to have a ſpecial care of the choice and purity of his Materials: but he muſt be more circumſpect then ever in all the Antimonial Operations, becauſe from thence depends very much, as alſo from his prudence and knowledge, the good or bad ſucceſs of his Operation.

Wherefore let him take well choſen Antimony, and well depurated Salt-peter, to make all the following Preparations; for as Niter is called the *Soap of the Wiſe*, ſo muſt it be pure and clean to perform that cleanſing, and that action which Authors hope to find in it. ℞ then well choſen Antimony, and well purified Sulphur, *ana* equal parts; beat them to Pouder each apart, then mix and put them in a Braſs Mortar covered with an earthen Pot Cover, or with a round Tile, haviug a hole in it of the bigneſs of a Thumb in diameter, through which it may be ſet on fire with a ſmall kindled Coal; this Operation which is callled *Fulguration*, *Fulmination* and *Detonation*, muſt be made in an open place, and you muſt get above the Wind, leſt you be overcome by the ſmoak, which is noiſome and dangerous, by reaſon of the corroſion of the nitrous Spirit, and the inflammation of the external Sulphur of Antimony. When the Mortar is grown cold, draw off the matter from it, which will be of two kinds: the uppermoſt participating of Salt-peter, Sulphur and Antimony; the undermoſt, which is in a compacted and cloſe lump of Liver-colour, and reſembling unto it, for which reaſon it is called *Hepar Antimonij*, or *Liver of Antimony*, is properly nothing elſe but an inſtantaneous, imperfect and opacous vitrification of Antimony, by the calcination which the Salt-peter performs in a moment. Theſe two matters are to be put together in a Braſs Mortar, and triturated to a ſubtil Pouder, which muſt be waſhed in warm Water, to ſeparate the fatneſs thereof; ſet the firſt Lotion aſide for the uſe we ſhall ſay hereafter, and continuing the Trituration, Lotion and Effuſion of the Liquor loaden with the ſubtileſt Pouder, until all the body of this Hepar, or Liver of Antimony, be transfuſed with the Water into an impalpable Pouder; ſeparate the ſaid Water, and dry the Pouder gently by Evaporation, and you ſhall have that which commonly is called *Crocus Metallorum*, or *Saffron of Metals*.

If the firſt Lotion be filtrated, and this clear Water precipitated with diſtilled Vinegar, there falls a red Pouder in the bottom, which is called *Sulphur auratum diaphoreticum*, diaphoretick golden Sulphur; but very improperly, becauſe it is nothing elſe but a portion of the external Sulphur of Antimony, which the fixt Salt of the Niter did keep diſſolved and hidden in it ſelf, and has been made corporeal and viſible by the help of the diſtilled Vinegar: becauſe all whatſoever is diſſolved by the Salts Alkali, is precipitated by acid Spirits; and contrariwiſe, all what is diſſolved by acid Spirits, is precipitated by Alkaly's. But let it not be fancied that this pretended golden Sulphur be Diaphoretick; nor let the Authors word be taken for a warrant in this matter; for it will deceive, unleſs you give it in a very ſmall Doſis, which ſhall not work; and if the Doſis be encreaſed, it will cauſe exceeding and violent vomiting: for it is nothing elſe but a very ſubtil *Crocus Metallorum*, wherewith many do prepare their Emetical Wine.

The ſecond Crocus Metallorum, *which is thought to be that of* Rullandus.

THis ſecond Preparation doth not differ in the matter, it only differs in the work, which is ſomething of longer deduction; for you muſt take ℔ ß of Niter, and melt it in a Crucible; and being melted, draw it off from the fire, and try, with a ſmall parcel of Antimony reduced to Pouder, if it will not take fire when put upon; and if it happens ſo, then ſtay yet awhile, for it muſt not burn to a flame: but as ſoon as by tryal you have found that the mixture may be made without inflaming, pour upon it gently, and by little and little, ℔ ß of Antimony made in Pouder, and mix it well with a Spatula or Slice, with the melted Niter, until all the Subſtances be well incorporated; this done, ſet it on fire with a kindled Coal, as you did the other, and you will have the ſame effect to ſucceed. This mixture and manner of working, is only for this end and reaſon, that the Niter in fluxion mixes and doth unite it ſelf, and penetrates much better the Antimony, then the Niter cold and in Pouder; and the conflagration or quick burning, doth carry much better away the impure Sulphur of Antimony, which makes the *Crocus Metallorum* leſs violent in its Operation, ſince all the ill conſequences commonly feared in Antimony, take their riſe from this impure and dangerous Sulphur, to which, though upon ſlight grounds, are attributed the Arſenical and Venomous Vapours of it.

The third Crocus Metallorum.

THE manner of working this third Preparation, is quite differing from the two former, but not leſs to be valued; for it requires a longer Calcination, and conſequently a better and more exact maturation of the undigeſted parts of Antimony, by the help of the Salts and fire: and you muſt proceed thus.

℞ Well choſen Antimony, well depurated Salt-Peter, and common Salt, well cleanſed and deſiccated, *ana* equal parts; reduce them into Pouder by themſelves; then mix them, the mixture put in a well luted Crucible, covered with a Cover, bored in the middle with a hole of the bigneſs of the ſmall fingers end, that the Vapours may exhale through it; put this Crucible upon a thick Tile or Brick in a wiped Oven, and lay round about it black and quick Coals up to the top of the Cover, that it may be heated by degrees; and when it is once heated, and that the Vapours of the Salt and Antimonial Sulphur begin to riſe through the hole, encreaſe the fire, and open all the doors of the Wind-Oven; adding to it alſo, if need be, the Air of the Bellows, that the matters may flow very well in the Crucible; and thus continue till the ſmoak or vapours begin to ceaſe, and even then continue a quarter of an hour longer; then let the Crucible wax cold, and break it afterwards, and you ſhall find your Antimony turned into a kind of Regulus, red as Vermilion, under the Salts, which as ſcums and droſs does lie above it; break it with a Hammer, and reduce it to Pouder without any Lotion, and keep for uſe as one of the beſt kinds of *Crocus Metallorum*, to make Emetical Wine: they attribute unto it the faculty of working more downwards then upwards, though it excites alſo Vomiting, but with leſs violence.

Theſe three *Crocus*'s, may equally and promiſcuouſly be uſed where the one fails inſtead of the other, ſince they have the ſame vertue, onely that they work more or leſs violently, which inconveniency may be prevented and remedied by diminiſhing the Doſis. Their faculties are, To expel the Head-ach, which proceeds from impurities of the Stomach; as alſo to help the Epilepſie, Pleureſie, Melancholly, Madneſs, and to help thoſe that have running Pains, and voluntary or ſpontaneous Wearineſs; they are alſo extraordinary good Remedies in all Feavers, as much continual as intermittent. Their Operation is wonderful againſt Plague, arthritical pains, coagulation of Blood. They are never adminiſtred in ſubſtance, but their Vertue is extracted by infuſion or ebullition; and when haſte requires, with ſome fermented Liquor, as Wine, Hydromel or Mead, Cider, Beer. The Doſis may be from iij *gr.* to viij, x, and xij. Moreover, they prove admirable Remedies in Glyſters, if the infuſion thereof be put, from ℈ j to iv, in Meat, Broth, or ſome Emollient or ſoftning or carminative Decoction.

Thus much we had to ſay of that Preparation which is called *Crocus*, by reaſon of ſome reſemblance in colour with Saffron, which hath a ſolar Tincture, but their vertues not analogal to that noble Spice of the Philoſophers; wherefore it is but improperly that they are called *Saffron of Metals*: for the true Sons of Art will onely impart this name to that noble excellent Preparation of Metals, by which they are reduced to a ſaffranous, ſweet and pleaſant Pouder, which is their meer volatile Sulphur, capable of all the Vertues and Qualities of Saffron; as to procure ſleep, mitigate pains, ſtrengthen the Heart, and all the functions of Life, open Obſtructions, ſerve as a conſolidative Balſom, and hinder the accidents of Wounds; maturate, ripen and diſſolve the hardneſſes and Nodus's; all which Vertues are attributed to Vegetable Saffron, though weakly. But the true Saffron of Metals, which is the true *Philoſophical Crocus*, doth eminently and perfectly contain and poſſeſs all theſe Vertues we have related: for it provokes ſleep, and allayes all griefs, becauſe it becalms all the irritations and rage of the internal *Archeus*, and corrects all the defects and deviations thereof; ſtrengthens all natural weakneſſes; removes all Obſtructions from the Entrails very efficaciouſly, and in a ſhort time: It ſtops alſo and appeaſes all Colliquations of Humours, and immoderate Fluxes; finally, it cures inwardly and outwardly all kind of malignant, cancerous fiſtulous Ulcers; and to ſay in a word, remedies all Diſeaſes to which humane Nature is ſubjected; becauſe it is a true Volatile Sulphur, which conſumes and gently drives away by the power of its heat and internal light, all the impurities and evil humours which lay lurking in the ſuperfluities of the laſt digeſtions. But this place doth not allow us to ſay more, our deſign only being to inform the Sons of Art, that then they will become capable of ſeeking this noble and divine *Crocus*, when in earneſt they ſhall apply themſelves to the love and true worſhip of their Creator, that by the help and aſſiſtance of his Light, they may penetrate into the moſt abſtruſe Cloſet of thoſe high myſteries of Art and Nature, which are contained in the true *Crocus of Philoſophers*.

The manner of preparing Diaphoretical Antimony.

IF we did recommend the Purification of Salt-peter for the *Crocus Metallorum*, we have reaſon to do it much more for the Preparation of this Diaphoretical: for as this Remedy is excellent,ſo muſt the Artiſt ſtudy with all his power to prepare it with all requiſite circumſtances; and the chief point of this Operation doth conſiſt in the goodneſs, purity and ſincerity of the Niter,becauſe by him the impure Sulphur of Antimony is to be expelled, and it is he that muſt digeſt, ripen and fix the indigeſtion of its Mercury, as we ſhall make appear in the progreſs of the Operation; which is thus prepared.

℞ ij p.of very pure & dry Salt-peter,and j p.of well choſen Antimony; beat them each aſunder into very ſmall Pouder, and mix them to the other: then fit a ſtrong earthen Pot not glazed,or a good Crucible upon a round Tile in a Wind-Furnace, and cover it, encompaſſing the ſame with kindled Charcoal almoſt to the top, that the Veſſel may be heated by degrees; and when it is grown red all about, blow in it to get out the filth or aſhes, if any be fallen in; then pour half a ſpoonful of this mixture, and cover the Pot with a well and exactly fitted Covering: as ſoon as the matter touches the Pot, it preſently kindles, and the Salt-peter doth forcibly carry away with it the impure Sulphur of Antimony; and what remains after this detonation or fulguration, doth fix it ſelf in the bottom of the Veſſel by the action of the fixed Salt of Niter, and the activity of the fire; thus proceed till you make an end of calcining your Antimony, putting it thus by little and little in your Veſſel: Which done, add another parcel more of very dry Niter to what is in the Veſſel, that it may flow with the matter, and perfect the Coction and Fixation of it by the penetration and action of the Spirits of Niter, which by their ſubtilty and quickneſs, inſinuate themſelves in and amongſt the leaſt Atomes of Antimony; and thus concoct, waſh, and fix it in a white and bruiſable ſubſtance, after it has been edulcorated and deſiccated. Keep up the fire one or two hours more, after you have put in the laſt parcel of Salt-peter; then ceaſe and let the matters cool in the Veſſel: you muſt carefully remove all the filth and impurity which might remain about the Pot, before you put it to ſoak in a pan full of boyling Water, which by degrees ſhall diſſolve the fixed Niter, which makes part of the lump remaining in the Pot with the Antimony; and when this lump is totally diſſolved, ſtir that remainder in the bottom of the Veſſel with a good Peſtle; and when the Water appears Milk-white, pour it in another Veſſel, and then grind in a marble Mortar what remains in the Pan; and continue ſtill to waſh it with the ſame Water, until all the Antimonial ſubſtance be converted into an Alkohol, as we have already taught in the firſt Preparation of the *Crocus Metallorum*; and if you intend to have ſooner done, break the Pot or Crucible as ſoon as it comes from the fire, and draw out the matter from it; which bray on a marble Mortar, and waſh it with ℔ ij or iij of Water only, until it be all converted into Alkohol. Draw off tthis firſt Water by decantation as ſoon as it is ſetled, and lay it by it ſelf; then pour new upon what remains, and thus go on, until the Water comes off from it taſteleſs; which done, dry the Diaphoretick, and keep it for uſe.

It was not without reaſon we have ſaid, that the firſt Water wherein the fixed Niter was diſſolved, is to be ſet apart; becauſe the nature of this Salt is altered by the Sulphur of Antimony, and is become of the condition of Alkali and Lixivial Salt, whoſe quality and eſſence is ſubtil, penetrating and igneous rather then corroſive, which is the reaſon it has diſſolved the pureſt portion of the Antimonial Regulus impregnated with its fixt and ſolar Sulphur, very well concocted and digeſted by the action of the Fire and Niter; and though this Water appears clear, yet it hath contracted a weight: wherefore this Water muſt be precipitated with diſtilled Vinegar, and it ſhall immediately turn as white as Milk, becauſe the Diaphoretick which was hidden in the diſſolution of it, doth manifeſt it ſelf, and with no unpleaſant ſmell; but contrariwiſe hath the very ſmell of Cream and ſworiſh Whey, whilſt it is edulcorating; and after the deſiccation is made, to keep it for uſe. And as we have ſaid, that the precipitate of this Diaphoretick, was of a very good ſmell, by reaſon of the fixedneſs of its internal Sulphur; ſo muſt we make it appear, that that which is prepared out of the pretended *Sulphur Auratum*, or Golden Sulphur, whereof we have ſpoken before, with diſtilled Vinegar, hath a very unpleaſant ſmell, becauſe it is nothing elſe but the external, impure, and volatile Sulphur which the Salt had drawn to its ſelf, being not ſufficient to draw it and expel away, much leſs to fix it, the parts of Niter and Antimony to make the *Crocus Metallorum*, being but equal: whereas in the Preparation of the Diaphoretick, there is firſt ij p. of Niter againſt j p. of Antimony; and that moreover j p. is added after the Fulguration or Detonation is ended, which doth perfect the Maturation and Fixation of all the crude and indigeſted remaining matter. We have thought neceſſary to ſay ſo much to inform the Sons of Art, that whatſoever muſt fix a ſubſtance, ought ever to be in triple proportion to what is to be fixed; and contrariwiſe, what is to be volatiliz'd, muſt in the ſame proportion be leſs, then what is to act and work upon it; and ſometimes the proportion is quadruplicated; as ℥ iv of Spirit to volatilize ℥ j of Salt; and ℥ iv of Salt, to fix ℥ j of Spirit: which obſervation paſſes for a fundamental Axiom in Chymiſtry. The Doſis of this Diaphoretick in body and groſs ſubſtance, is from *gr.* iv, to xxx; and of the Precipitate, from *gr.* iij, to xx. The vertue of both is very eſtimable, and of a high value in Phyſick; for though we call them *fixed*, it is only comparatively to other Antimonial Remedies, which provoke violent Vomitings and Purgation: for the Diaphoretick, works by an irradiation of vertue and efficacy almoſt inconceivable; becauſe it ſtrengthens gently and naturally the internal *Archeus*, which is the principal Director of all the Functions of Life, either in health or ſickneſs: wherefore the uſe of it muſt be continued without interruption during the ſpace of a Philoſophical Month, becauſe during that time, it is capable to alter and change for the better, whatſoever is hurtful, and hinders the liberty of the actions of this principal and real *Archeus*. But if it be applyed and appropriated to particular Diſeaſes, as alſo to parts of the Body, we ſhall be bold to ſay, that the Diaphoretical Antimony is an unparallel'd Remedy, to reſiſt the corruption which may breed and lurk in the Body, mundifying and rectifying the whole maſs of the Blood, and being capable to open the moſt inveterate obſtructions of the Liver, Spleen, Meſentery, Pancreas, and all other parts beſides: it removes the ſtopping of Courſes, cures Green-ſickneſs, Dropſie, Hypocondrical Melancholy, Pocks, and all the accidents thereof; mundifies and cures inward and outward Ulcers; breaks inward Impoſtumes without danger: and finally, is ſingular againſt malignant and Spotted-Feavers, Meaſels, and ſmall Pocks. And though this Diaphoretical be a general Remedy, there are ſome nevertheleſs which think to particularize and render it ſpecifical to certain parts of the Body, and Diſeaſes, adding Metals, as Gold, Silver, Tin, Copper, or Steel, to the Antimony, or its Regulus, before it be calcined with Niter, and thus pretend to render it Cordial, Cephalick, Stomachick, Splenetick or Hepatick: but our Opinion is, that thoſe Metals are not opened enough for this plain Antimonial Fuſion, to communicate ſo eaſily their vertue, which doth properly lurk in a central Sulphur, not ſo eaſily extracted; and as Antimony is a Mineral, whoſe Sulphur is leſs cloſe and fixed, let us content our ſelves with what Nature and Art have ſo bountifully ſupplyed us with, and with ſo ample and ſo diffuſed a vertue.

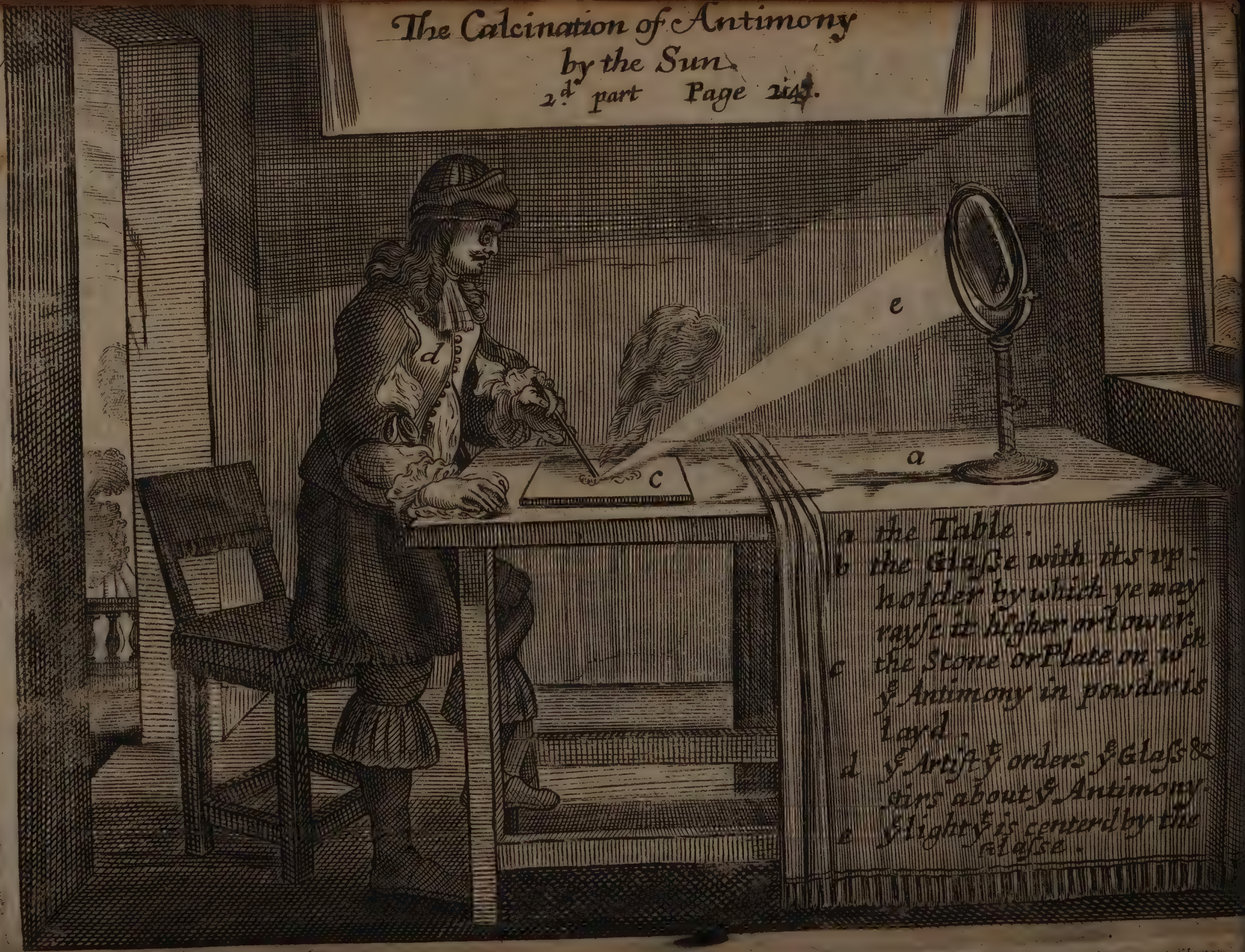
Of the Regulus of Antimony.

WEE have already ſaid above, that the Regulus of Antimony is nothing elſe but depurated Antimony: but the purification ought to be made without Tartar; becauſe the Alkali which reſults from the Tartar and Niter, is a mixed Salt, which doth extract and diſſolve the moſt fixt and inward Sulphurs of Mixts, as it appears by the feces and skum ſwimming above the Regulus, made with Tartar, which are high in colour, and by the ſmall quantity of Regulus extracted this way. But it may be ſaid, that it is not ſo much the true Artiſt's part to ſeek for quantity as quality; and that although he may attain to more by another manner of working, yet ought he to prefer and acquieſce in that which yeelds leaſt, becauſe it is thought to be more pure and more open. To anſwer this Objection, we muſt lay firſt for a Foundation, that Steel is to be uſed for making of the Regulus, to make it good; that Iron or Steel are capable Agents to attract to themſelves the impure and combuſtible Sulphur of Antimony, by reaſon of the ſiccity, poroſity, and terreſtrity of the Iron, which longs to ſupply himſelf of what he finds to be deſtituted of, attracting it from every ſubject or ſubſtance wherein he can find it; as we have in ſome manner made manifeſt when we deſcribed the purification of Iron, and the turning of it into Steel, by the help of the fat, volatile and unctuous Sulphur of Ox-horns. Moreover, Niter doth cauſe a ſudden inflammation, and a fuſion, which raiſes up by an ebullition, and as it were, an inſtantaneous fermentation, all the Iron or *Mars*, the terreſtrial Impurities, and external Sulphur of Antimony, inſomuch as the onely Reguline and Mercurial part of Antimony, remains in fuſion in the bottom of the Crucible, poſſeſſing in it ſelf the fixed and ſolar Sulphur, which by ſympathy and analogy of ſubſtance, hath attracted the ſoul of *Mars*, which is its pure Sulphur. Thus muſt the Artiſt conſider, that in the Operation, the pure part of the Antimony is preſerved, and that we deprive it of its impurity; and moreover, that we add yet to this part another Sulphur, which hath no leſs efficacy then that which is contained in it; whereas Tartar never fails to diſſolve and extract the pure part and its Sulphur, which muſt of neceſſity be well preſerved, if you will have the other Operations reſulting from it, to ſucceed with that vertue and efficacy which is deſired, of which nothing can be the cauſe but this pure Mercury and its Sulphur; all which reaſons invite us to give you the deſcription of this following Regulus.

The beſt Preparation of Regulus of Antimony.

℞ ℔ ß of ends of Horſe-nails, or ℔ ß of filings of Iron or Steel, very pure and clean, put in a good Crucible, ſomething big and deep, and place it in a Wind-Oven upon a round bottom or Tile, called by the French, *Culotte*, already mentioned before; cover it with a piece of Brick, bury it in Charcoal mixt with kindled Coals, that they may take fire by degrees, and ſo by little and little ſeaſon the Crucible; and when the fire is well kindled, and that the Artiſt ſhall ſee the Iron or Steel to be in a very red and clear ignition, ſo as to draw near the white glowing; add then to it ℔ j of well choſen Antimony in Pouder; then cover again the Crucible with the Brick and Coals, to advance the fuſion and union of the two matters, and as ſoon as you ſhall by frequent inſpection perceive them in that ſtate; make ready your Cornet, or Caſting-Veſſel for Regulus, if you have any, keeping it warm, and beſmearing it with Wax in the ſides towards the bottom, and throw in the Crucible ℥ iij or iv of Niter in groſs Pouder, very dry, and ſomewhat warmed, that it may the ſooner take flame with the Sulphur of Antimony, that the fuſion thereof may be quicker and cleaner; for as ſoon as the Crucible is toucht by the Niter; there follows immediately an ebullition of the matters with a noiſe and ſparkling, cauſed by the internal Air of the Niter, and the mixture of the Sulphur with the Iron or *Mars*: But the Artiſt muſt have a ſpecial care to have his Pincers in readineſs to draw the Crucible, and pour the melted matter into the Regulus Pot, as ſoon as the ebullition is over; otherwiſe there would a cruſty ſubſtance gather on the top, which might hinder the caſting of it, and is of very hard and difficult fuſion: As ſoon as the matters are in the Regulus Pot, ſtrike upon the brims of it with a Peſtle or Hammer, to cauſe the Regulus the better to ſeparate it ſelf; but if you want this Veſſel for caſting your Regulus, you need only draw your Crucible from the fire, and ſtriking ſoftly upon the brims of it, let it cool. It would nevertheleſs be neceſſary to be furniſhed with this Veſſel in a Laboratory, becauſe you might thereby preſerve your Crucible from the neceſſity of being broken, and ſo preſerve them for other fuſions, and the purification of your Regulus, beſides that it will ſave much time and fire, which otherwiſe muſt be unneceſſarily ſpent; for your four meltings or fuſions, may be made conſecutively in one and the ſame Crucible: either of theſe two Veſſels being cooled, either turn upſide down the Crucible,and ſtamp or beat it againſt the ground to make the Regulus come out, or break the Crucible, and therein ſhall you find an uniform lump ſeemingly: but knock upon it about the middle, and the Regulus which is in the bottom, will forſake the feces that are uppermoſt, and are nothing elſe but the Iron Sulphur, and terreſtrial impurities of the Antimony, with very little remaining of the Niters, which alſo frame by themſelves a kind of cloſe compacted lump, which every day diſſolves it ſelf in the Air into a dry Pouder, reſembling ſmutty and terreſtrious filings of Iron. The Regulus being not pure enough in the firſt melting, you muſt therefore beat it to Pouder, and add to it ℥ iij of Antimony in Pouder, to accelerate the melting thereof, and put it in a new Crucible, and cauſe it again to flow in a Wind-Furnace; and when it ſhall be in fuſion, throw into it ℥ ij or iij of very dry Niter, and warm'd into a Pouder, and there will happen yet a ſmall ebullition; throw it immediately into the caſting-Veſſel, and knock upon it; ſeparate the Regulus from the blackiſh and impure dregs, and it will come out twice as pure and white: proceed thus the third time, and the dregs will be either more gray or whitiſh, which is a ſign that it begins to draw nearer the ſtate of its purity: wherefore proceed to the fourth fuſion,and alwayes with new Niter dry and warm, giving a very ſtrong fire this laſt time, that the Niter may be in a very good fuſion, and draw to the colour of a Partridges eye; caſt it quickly, and with nimbleneſs ſtir the caſting-Veſſel, being firſt well warmed, and turn it round, and you ſhall have a *Stellate* or *ſtarry Antimony* to the very Center, white as Silver, and flowing already ſomething of its ſolar Tincture: for the Niter which was in fluxion on the top of it is all yellow,an infallible ſign with the ſtar which appears on the top of it, that the Regulus hath attained the true point of its purity and perfection, to be freely uſed in the preparation of thoſe noble Remedies which it is capable to yeeld.

If the Artiſt will raiſe his curioſity ſo high, he may frame Cups and Pots with this Regulus, as alſo Pellets or ſmall Globes, and he will have that which they call *Pocula perpetua*, and *Pillulæ perpetuæ*, the Purgative and Emetick Vertue whereof is never exhauſted; though Wine be every day put in fuſion in the Cups, or the Pellets or Globes ſwallowed down every day, which may be taken up again after evacuation; and being waſhed,



The Calcination of Antimony by the Sun.
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a
b
c
d
e
a the Table.
b the Glaſſe with its upholder by which ye may rayſe it higher or lower.
c the Stone or Plate on wch ye Antimony in powder is layd.
d ye Artiſt yt orders ye Glaſs & stirs about ye Antimony.
e ye light yt is centerd by the Glaſſe.

waſhed, made uſe of with as much efficacy as before, as by daily experience it is found true, which doth evidently prove that Antimony doth as much or more participate as any other Mixt, of light and heavenly Fire, whoſe Vertue never decreaſeth, though he imparts every day his Rayes and bountiful warmth: ſo is it onely by an emanation or irradiation of the inward vertue that theſe Cups and Pills do work, and it is alſo by irradiation and influence from above of the igneous and ſulphurous quality of their ſubſtance, that their Vertue is miraculouſly, as it were, repaired, and again ſupplyed.

The Solar Calcination of Antimony.

WEE have demonſtrated before, that the Antimonial Calcinations made with Niter, were opened by it, purified and fixed; which could not be done, unleſs this Salt did partake altogether of the nature of Light, which is found to be corporified in it: But we muſt ſhew pathetically here, that the Sun, Father and Spring of the Light, by whom Niter is generated, doth purifie and fix Antimony much better, and with more efficacy then Niter can do; which is a kind of Calcination Philoſophical indeed, and worthy a Son of Art, whoſe curioſity leads him to ſearch and pry into the Wonders of Art and Nature: But thoſe that are ignorant of the noble Works and rare Effects of Magical and Celeſtial Fire, drawn from the Rayes of the Sun, by the help of a Refracting or Burning-Glaſs, ſhall ſcarce believe that which we have to ſay, and are to demonſtrate upon this Subject.

For this noble and miraculous Fire, preſerves and encreaſes the ſubſtance of Antimony, whereas common Fire and Salts do alter and deſtroy it; which truth we make good thus: Take xij grains of Antimony, either Mineral or Common, grind it into an impalpable Pouder, and calcine it in common Fire, or by Salt, it yeelds a ſmoaky Vapour of an unpleaſant ſmell and colour, which is heavy; for if this ſmoak was kept in a ſublimatory Veſſel, there would be found Flowers, which are nothing elſe but meteoriz'd Antimony, as we will make it plain when we come to ſpeak of the Sublimation of this Mineral; which is the cauſe that the Antimony is found to be decreaſed of five or ſix grains, when the Calcination is driven and brought up to a gray or white Pouder, which has yet a purging and emetical quality: but if you calcine the ſame weight and proportion of Antimony with a Refracting or Burning-Glaſs, which doth concentrate the Light of the Sun-beams to make it work upon the matter; this Mineral doth yeeld alſo Vapours, as when it is calcined by common fire; and conſequently it were rational that it ſhould decreaſe to the ſame proportion; but it happens otherwiſe, for the Calcination being often reiterated, and the Antimony turned into a white Pouder, you ſhall find it to weigh xv grains inſtead of xij that were taken at firſt, and conſequently it is encreaſed in double proportion almoſt, whereas the Vapours which it hath exhaled, ſhould have decreaſed it as much: but that which is yet more to be admired, and leſs conceivable, is, that theſe xv grains of white Pouder, are neither vomitive nor purging, but contrariwiſe Diaphoretical and Cordial; which doth caſt into admiration, not without reaſon, the moſt curious and intelligent ſearchers of Nature, and the wiſeſt Phyſitians. But this Wonder ſhall ceaſe as ſoon as we begin to apprehend and to know, that Light is that miraculous Fire which conſtitutes the principle of Antimony, and it is the ſame now that hath prepared it. By which it appears that this noble Mineral hath a kind of natural Magnes in it ſelf, which makes it capable to attract from the higheſt Heavens this noble Kin and ſimilar Light, by which it is produced and ſupplyed with its Vertue. This Solar Calcination is then performed in the following manner.

Let the Artiſt have a Burning-Glaſs of three or four foot Diameter, made with two concave pieces of Glaſs joyned together, the two concavities within looking one towards another, the convexity without, and let there be a hole to fill up the concave ſpace with clear Water; for this Glaſs will concentrate more beams, and calcine better, then if it was all of one piece, and broader in Diameter. The pieces muſt be well glued together with Ichthyocolla or Fiſh-glew, that the Water may not come out again; it alſo muſt be fitted upon a Pedeſtal or Foot, wherein is a Screw to raiſe and depreſs it according as occaſion ſhall require; it muſt have moreover a pair of green Glaſs Spectacles to help the ſight, and enable the Artiſt to lead the edge of the Sun-Beams upon the Antimony, and move it as it goes on calcining; otherwiſe the vivacious quickneſs of this light ſhould impair and ruine the ſight: place the Antimony upon a well poliſhed Porphyry Stone very ſmooth, and have a grinding Stone ready at hand to grind it when it is turned into crums. The Antimony muſt be made into the ſubtileſt Pouder that can be; and a great care muſt be taken in guiding the light, ſtirring the matter, and grinding it; and ſo proceed, till it be reduced into a white Pouder, which gathers it ſelf no more into crums, neiter yeelds any ſmoak or exhalation when the Light is directed upon it, or when it is put upon a red glowing piece of Iron, which is an argument of its fixedneſs. The Stellat, or Starry Regulus, may much better be calcined in the common Antimony, and the Diaphoretical Remedy prepared therewith, ſhall prove much more efficacious and better. The Doſis may be from ij grains to xij, to be uſed in all the Diſeaſes we have rehearſed above, and experience will make it manifeſt, that this Remedy is comparably better, and of more excellency then the common Diaphoretick. The figure before annexed, will demonſtrate all what belongs to this Operation, much more natively and plainly then our Pen can repreſent it; and ſo put we an end to the products of the dry Calcination of Antimony, and come to the moiſt Calcination, which is Precipitation.

Moiſt Calcination of Antimony.

THere is no need of repeating here to no purpoſe, what we have already ſaid in handling the Precipitates of Mercury, becauſe it is rather a Calcination then Precipitation; wherefore we ſend back the Artiſt to what we have delivered above. We will give two Examples of theſe pretended Precipitates, that the Artiſt may the better be informed of all the manners of working, which may elevate his mind, and raiſe it to attempt higher and more important matters, of which theſe Preparations are, to ſpeak properly, but the Rudiments.

The firſt Precipitate of Antimony.

℞ As much as you will of well choſen Antimony, make it into courſe Pouder, and throw it in a long broad neck Matraſs, and by little and little, pour upon it good Regal Water, agitating and ſtirring ſoftly the matter, until the Menſtruum goes above it three fingers high; but take care in the working of the Diſſolvent; put the Veſſel to digeſt in Aſhes, in an equal heat, until you ſee the Antimony fallen to the bottom in the form of a white Calx; then pour all into a Retort, and draw off the Regal Water by diſtillation in Sand, until the ſaid Pouder in the bottom becomes very dry; then digeſt it in diſtilled Rain-Water, and edulcorate it well with new Water, then dry it gently; after this, having put the ſame in a Crucible, reverberate it for the ſpace of ſix, ſeven, or eight hours, or until the colour be changed and exalted into a red ; if you will ſpare fire and labour, you may put this Calx in a Crucible covered and well luted, and put it in a Potters Furnace to reverberate, during the time his work is a baking. This Precipitate doth very happily and ſucceſsfully purge the yellow and mordicant, or harſh ſeroſities, lurking for the moſt part in the bottom of the Stomach, and adjacent parts, which it does very well both upwards and downwards ; not that it is of it ſelf violent or purging : for it doth otherwiſe operate in thoſe that are not ſtuft with thoſe ſuperfluous ſeroſities, and have no vice or defectuoſity in the fermentation of the Ventricle ; for it works with them by Sweats, Urine, or inſenſible tranſpiration. The Doſis may be from *gr.* j. to viij, in Cordial Conſerves, or Gelly of ſome Fruit.

The ſecond Antimonial Precipitate.

℞ As much as you will of well choſen Antimony ; grind it to Pouder, and put it in a Matraſs ; and pour upon it Regulus Water two inches high ; put the Veſſel to digeſt in Aſhes, and ſtir it from time to time to facilitate and advance the diſſolution : then draw off the diſſolution by decantation very cleanly, or filtrate it in a Glaſs Furnace with Glaſs groſly beaten : this filtration pour into a Retort, and diſtil ſoftly in Sand to a dry bottom ; pour upon the remaining Pouder, diſtilled Rain-Water, and digeſt it in *B. M.* until it hath contracted a red Tincture ; ſeparate the Tincture, and proceed in the digeſtion and extraction with new Water, until it draws no more colour ; all theſe Tinctures gather together and filtrate ; then draw off the Water again in Aſhes by a ſlow diſtillation in a Cucurbit to a dry bottom : pour upon the remainders, very good diſtilled Vinegar, and extract with it again until it will take no more of the colour ; filtrate the Tincture, and throw away the white remaining feces : draw off the Vinegar in Aſhes ſlowly to a dry bottom, or rather to the conſiſtency of a thick Syrup, upon which pour tartarized Spirit of Wine ; lute well the Veſſel with its Blind-head, and put it to digeſt and extract in the Vaporous Balneo during three weeks, and you ſhall have a fair and red Tincture, which you muſt filtrate again, and throw away the feces ; then draw off the Spirit of Wine in the ſlow heat of *B. M.* to a dry bottom, and you ſhall have a Pouder or Precipitate, which is none of the leaſt Preparations which Antimony doth yeeld. It is a Soveraign Remedy againſt the Pocks and Scurvy ; but above all, it excels all other things to diſſolve congealed Blood, and reſolve and evacuate all inward Impoſtumes, and the matter contained in them, without any danger. The Doſis muſt be from *gr.* ß, to iv or v, in ſome appropriated Water, or ſome Cordial and Stomachical Spirit, or in Bolus in ſome Confection or Conſerve.

The Sublimation of Antimony.

THis is one of the moſt neceſſary Operations to open the Body of Antimony, and to begin the maturation of the crude and inſtigeſted Subſtances that are hid in it. And the Son of Art muſt know, that when *Paracelſus* ſpeaks of reducing Antimony into Alkohol, by the Preparation of his *Lili*; that his meaning is not to have it ground upon the Marble Stone, to reduce it into an impalpable Pouder; but that he underſtands another much more Philoſophical Trituration, which is the meteorizing and exalting of it into Vapours by the help of fire, which is nothing elſe but its ſublimation; for you muſt obſerve, that this great and wonderful Artiſt requires that all the body of Antimony ſhould paſs, without leaving behind the leaſt ſmall portion of its Sulphur and Mercury, which it can do by no other way but ſublimation. The ſublimation yeelds alſo the Flowers of Cinnabar, whereof we ſhall ſpeak hereafter.

How the Flowers of Antimony are to be prepared.

PUT an earthen unglazed Pot of ſtrong reſiſting and laſting ſubſtance, againſt the violence of the fire, in a Wind-Furnace; let there be four holes (as Regiſters) about the Pot, to draw the better the fire; upon this Pot lute another, which may encompaſs the brim of the undermoſt; and let the bottom of it be bored with a hole of three or four inches diameter, and let it have alſo another hole in the ſide of about an inch diameter, that the Antimony may be thrown that way into the firſt Pot; after this, fit upon theſe two Pots three or four more, one on the top of the other, with a hole in the bottom as the ſecond; but let the bottom in the laſt be no bigger then to paſs your finger through, that it may be ſtopt with a little knob of Earth. Have alſo an earthen ſtopple very exactly fitted to the hole, through which you are to throw the Antimony. The Pots being well luted; and the Lute dry, give it firſt a gentle fire, then en-

encreaſe it until the firſt Pot be glowing red on all ſides; then begin to throw in it ʒ ij of Antimony in Pouder, and not above at once; renew with as much every half quarter of an hour, and always maintain the fire that the Pot may grow more red: you may keep doing this as long as you will, according to the quantity of matter you intend to prepare, and you ſhall find your Antimony to be ſublimated into gray, white, yellow, and ſometimes red flowers, according to the managing of the fire. The Flowers are not much in uſe for purging ſick Perſons, by reaſon of their violent Operation, for they are properly the Sulphur of Antimony, but they are fit to prepare other Remedies, after they have been duly corrected. They may nevertheleſs be adminiſtred from ij grains to iv or vj, to the ſtrongeſt conſtitutions, in Conſerve of Roſes, or infuſion of White-Wine. But they that will make uſe of the Flowers of Antimony without fear of their violence, muſt ſublimate them, as we ſhall now teach.

Flowers of the Regulus of Antimony.

WEE take for this Operation, Regulus of Antimony, becauſe it is already deprived of the moſt part of his impure and foul Sulphur; and moreover, becauſe the Salt Armoniack added in this Operation, carries onely along with it the pureſt Sulphur and Mercury of the Antimony. ℞ then ℔ ß of fair Antimonial Regulus, and as much of very pure Armoniack Salt, make them into Pouder each ſeverally, and mix them exactly; then put them in a Retort in Sand, cover it with its Still-head, and fit a Matraſs to it for Recipient; lute and give it fire until all what may aſcend, be aſcended. Then take the Flowers, which will be of a yellow colour, and edulcorate them with diſtilled Rain-Water, and you ſhall have an excellent Remedy, much leſs violent then the plain Flowers. It is adminiſtred to mad or maniack melancholy Perſons, and thoſe that are diſturbed with Quartan Agues. The Doſis ought to be from ij *gr.* to vj, in Conſerve of Roſes, or infuſion in ſome fermented Liquor.

Note, that if you put in fluxion the plain Antimonial Flowers, with the double proportion of their weight of very pure Salt-peter, in a Crucible in the open fire, and edulcorate them afterwards; then digeſt them in Spirit of Wine the ſpace of fifteen days, and then ſet the Spirit of Wine burning upon them, there remains a Diaphoretical Pouder, which is miraculous for purifying the Blood. The Doſis of which is from iv, to x or xij grains. But as the plain and white Flowers of Antimony, are an admirable Remedy in the moſt rooted Diſeaſes, and that their violence hinders the free and more frequent uſe there; we think fit to give ſome Directions for the true correction of the ſame.

The Correction of the Antimonial Flowers.

℞ ℥ j of very ſubtil and white Antimonial Flowers, mix them with ℥ j ß of the Salt of Tartar of *Sennertus*; put this mixture in a good Crucible, and with a ſtrong fire melt them in a Wind-Furnace, and they will turn to a red lump; which reduce to pouder in a hot Mortar, adding to it diſſoluable Magiſtery of Pearls and Coral, of each ʒ j ß: put this pouder in a Matraſs, and pour upon it aromatized Spirit of Wine four fingers high; and having ſtopt the Matraſs with another oppoſite, or a Blind-head, let it gently digeſt in Aſhes the ſpace of three natural dayes; then pour all into a ſmall Cucurbit, and draw off the Spirit of Wine to a dry bottom, in the ſlow heat of *B. M.* and you ſhall have a well corrected and pleaſant Antimony, which keep for uſe in a well ſtopt Viol, otherwiſe it would melt and diſſolve in the Air. It is exhibited in Conſerve, or in Wine, from iv *gr.* to xvj, againſt all inveterate Diſeaſes, chiefly againſt the ſtrongeſt and moſt ſtubborn impreſſions of Melancholy, intermittent Feavers, and all kind of Obſtructions. It works variouſly, according to the matters it meets with in the Stomach; for it ſometimes provokes provokes Vomiting, but not alwayes; it Purges by Stools, Urines: but the chief and beſt Operation thereof, is performed by inſenſible tranſpiration, becauſe it ſtrengthens by the irradiation and emanation of its Vertue, all the natural Digeſtions, and cauſes the internal *Archeus* to drive away or expel from the Center to the Circumference, all what is hurtful and obſtructive to the Oeconomy of Health and Life.

How to prepare the Aromatized Spirit of Wine.

℞ Galanga, Gloves, Cinnamon, Mace, *ana* ʒ ij; Saffron, ℥ j ß; Lignum Aloes, ʒ j; Ambergreeſe, ℈ j; and Musk, vj *gr.* reduce all to Pouder, and mix them; then extract their Tinctures in a Blind-head or double Veſſel, with good Alkoholized Spirit of Wine; draw off the Tincture; and proceed in the extraction, until the Spirit of Wine draws no more; joyn all together, and keep it in a Bottle as a great Cordial and ſtrengthner of the Brain and Stomach; as likewiſe to help Digeſtion, and to correct Chymical Remedies, and particularly thoſe that are extracted from Mercury and Antimony. We will not ſpeak here of the Cinnabar or Vermilion of Antimony, though performed by ſublimation, becauſe we intend to ſpeak of it hereafter, when we ſhall come to treat of the diſtillation of Antimonial Butter, and the glaſical Oil of this Mineral; for theſe Operations cannot be made aſunder.

The Diſtillation of Antimony, which yeelds the Vinegar or acid Spirit, the Oil and Spirit of Antimony.

THE Son of Art muſt here be armed with patience for the diſtillation of this Antimonial Vinegar; for beſides that very little can be extracted, much time muſt be ſpent beſides in the Operation, and much heed and circumſpection uſed; but as he ſhall find in Authors, that this acid doth extract its own body, it is neceſſary he ſhould be taught a mechanical way to make the diſtillation thereof: which is performed in the following manner.

The Diſtillation of Antimonial Vinegar.

℞ Mineral Antimony, courſly beaten to Pouder, and put about ℥ j in earthen Pots made in the form of ſmall Cupels, which muſt be placed Checkerwiſe one above the other, in the lower part of a capacious earthen Retort cut in two pieces; and having fitted again the upper part to it, lute it well, and bind with a thick Wier; then place it in a cloſe Reverberatory, and having fitted to it a large Recipient, give it a good fire the ſpace of twenty four hours, as you would do for the diſtilliation of the Spirits of Vitriol; then ceaſe the fire, and opening the Veſſels, keep the acid Spirit which is come forth but in very little quantity; then put new Antimony in the ſmall Cupels, and begin anew; and thus proceed until you have enough of this Spirit for the work you intend, or for phyſical uſes. But you muſt ever ſet apart the Mineral Antimony, after it hath been diſtilled, and expoſe it to open Air: for it will attract from the Heavenly influence of the Stars, and the Spirit of the Air, enough to ſupply again a new diſtillation at the end of ſix weeks or two months: and thus ℔ vij or viij of Mineral Antimony, will ſuffice for the diſtillation of this Spirit, and you will never be unprovided for your uſe in the ſame Operation. This acid Spirit is uſed for extracting the Tincture of its own body; wherefore the Artiſt muſt not be miſtaken when he reads in the moſt famous Writers, and celebrated Authors which have treated of Antimony, that it is to be extracted with diſtilled Vinegar, for he muſt not underſtand this of common Vinegar; but he muſt know that their meaning is of Vinegar extracted from Antimony without addition. This acid is ſingular to cool all intemperancy of the parts of the Body, and chiefly ebullitions of Blood; wherefore it is with a very happy ſucceſs adminiſtred in continual Feavers, malignant, hot and putrid Agues; for it penetrates the body, and gives a great refreſhment to poor Patients; you muſt mix ſome of it with *Alleluya Water*, or only with common Water, and a little of the Syrup of Juice of *Alleluya*, or Wood-ſorrel. The Doſis muſt be to a pleaſant ſharpneſs and acidity. Beſides its internal uſe, it is wonderful, outwardly applyed, for it takes away the fire and inflammation of burnings made with Gunpowder, if it be mixed with Salt of *Saturn* in Water, and applyed with wet Fillets, or made into a *Nutritium* or Liniment with Oil, to anoint therewith the burnt parts; and thus you ſhall not fail to ſee ſome very notable Effects of it.

The Diſtillation of Oil or Balſom of Antimony.

℞ Equal parts of white Sugar-candy, and well choſen Antimony; grind them each ſeverally, and being exactly mingled, put them in a Retort, and put over M j of very clean Hemp, to hinder the body of the matter to riſe and paſs in the Recipient, when it begins to feel the heat, and make an ebullition, which cannot otherwiſe be hindered then by this Tow. The Retort place in a cloſe Reverberatory, and fit to the ſame a good Recipient, beginning the fire ſlowly, and encreaſing it by degrees, until you ſee no more drops nor Vapours come over the Helm. Let the Veſſels cool, and pour in a Matraſs what you ſhall find in the Recipient; add to it tartarized Spirit of Wine three fingers high, and digeſt them together in the Vaporous Balneo the ſpace of three or four dayes; filtrate all in the cold through a Cotton in a ſmall Cucurbit; which having placed in *B. M.* draw off the Spirit of Wine; keep this Oil or Balſom in a Viol for uſe, for it is an excellent Balſom, and almoſt miraculous for the ſudden cure of new Wounds, Ulcers, Contuſions, if it be only applyed upon, or in the ſame with Feathers or Cotten. But it is beſides

ſides a ſurpriſing Remedy againſt intermittent Feavers, and chiefly againſt Quartans; for the cure of which are prepared the following Pills.

Pills againſt Agues.

℞ ℥ j of Antimonian Balſom; ℥ ß of Aloes purified by the Juice of *Carduus Benedictus*, and reduced into an Extract; ʒ ij of Ambergreeſe; ʒ j of Tincture of Saffron, thickened and evaporated into a thick Surup: reduce all into a lump or maſs fit for Pills, which ſome do call *Mercurial Laudanum*, and good againſt Agues. The Doſis muſt be from iv *gr.* to xvj, in Conſerve of Marigold-Flowers, or Roſes; they gently purge downwards, and ſometimes provoke ſweat, or work by inſenſible tranſpiration.

Diſtillation of the Butter or Icy Oil of Antimony.

IT is neceſſary we ſhould deliver ſome Notes upon this Operation before we deſcribe it: for it hath been made ſo many wayes, and Authors entertain to this day ſo various opinions about it, that an Artiſt will be much put to it, to know what to believe. For they have firſt been of Opinion, that the ſublimated Mercury did contribute very much to the purging vertue of ſuch Remedies as are prepared with this Oil, and that the ſubſtance of the Mercury did come over the Helm and make part of this Oil: which nevertheleſs is neither true nor probable, as the ſublimation of Mercury with Sulphur and Antimony doth peremptorily evince, even as the remainder of the Mercury which is vivified again into a Body of running Quick-ſilver, either in the Retort or Recipient. But if this Oil be made with the Regulus of the Antimony, there is no ſublimation at all, becauſe the Regulus is diveſted of its external and courſe Sulphur; but all the Mercury is quickned again in its own weight, except the Spirits of thoſe Salts that have forſaken him to work upon the Antimony, and diſſolved it to convert it into Butter. But the proof is more convincing yet, if the Sons of Art will take the pains to receive that Emetical Pouder, which is made from this Butter into a Regulus by the help of Salt, Tartar and Niter, by which it appears that this Pouder is nothing elſe but pure Antimony. And the laſt and ſureſt proof is, that this Butter of Antimony may be prepared without the mixture of ſublimate Mercury; for if you take only Vitriol, common Salt, and Antimony, you may draw an Icy Oil which will be of the ſame nature of that which is prepared with Sublimate, except that it ſhall not be ſo ſubtil and penetrative, the Spirits of the groſs ſubſtances being not ſo capable of penetrating or well diſſolving the Antimony, as are the Spirits coagulated with corroſive Sublimate. The ſecond Note is concerning the Doſis of the Sublimate: for ſome do take equal parts, others the double, and others more or leſs; but as a true Son of Art muſt perform his Operations without Heſitancy, and with a real knowledge of the matters he works upon, and of their reciprocal action, he muſt lay as an indubitable Axiome and truth, that the Diſſolvent which is the Agent, muſt ever be predominant in weight over the diſſoluble ſubſtance, and ſo he ſhall never fail to work with ſucceſs, if he takes three parts to one. Some do rank this Work amongſt the Mercurial Operations, and do call it *Mercurius Vitæ*, or *Life-Mercury*, but we did chuſe to put it amongſt the Preparations of Antimony, for the Reaſons above declared. It is thus prepared;

℞ ℔ j of well choſen Antimony, and ℔ iij of corroſive Sublimate, very pure and chryſtalline; put them into Pouder, each ſeverally, and mingle them together; then having poured this mixture into a Retort, three parts whereof at leaſt of the four muſt be void, and fit a Recipient with a narrow neck, that the noſe of the Retort may not come into this neck above an inch, for the need there is to cauſe the icy Oil to melt and flow when it coagulates it ſelf in the ſaid neck of the Retort, or of the Recipient; lute the Joints onely with Paper and Meal-pap, and give it an open fire gently by degrees, until the vapours and drops begin to aſcend, and ſo keep it in that ſtate, until ſome matter begins to ſublimate on the top of the Retort, for it is a ſign that the Cinnabar and Vermilion begins to riſe; then take off the Recipient, and ſubſtitute another, becauſe that which ſhould ſtill down, might in ſome kind ſpoil and prejudice that which ſhould be contained in the firſt: this done, encreaſe the fire vigorouſly, and even encompaſs the Retort to the top with burning coals, placing them above gently, to drive all the ſublimation into the neck of the Retort, and the reſt of the Mercury which ſhall not have Sulphur enough to be coagulated into Cinnabar, ſhall quicken again, as it will appear; after the ſublimation is ended, ſeparate the Cinnabar from the running Mercury, and keep this laſt for the ſame uſes as you do common Quick-ſilver. But the Cinnabar may be uſed for preparing Trochisks, thoſe that ſhall be in a courſe of cure of the Pocks. They are alſo uſed in Pills in Venerean Diſeaſes, and all the dependances of it, becauſe this Antimonian Sulphur which hath cleft to the Mercury, and hath coagulated it, is of a much more exalted Vertue then common Sulphur, inſomuch as the one joyned to the other, doth purifie together the maſs of the blood, and hinder all corruptions which may be generated in the parts dedicated to Copulation. The Doſis muſt be from vj *gr.* to xx, in Pills or Bolus, with *Chian* Turpentine, *Peruvian* Balſom, or extract of yellow Amber or Karabe.

Pour the icy or glacial Oil which is in the firſt Recipient into another Retort, after you have cauſed it to melt in a ſlow heat; the Funnel alſo muſt be hot that nothing may coagulate, make all what is in the neck of the Retort, which receives the ſubſtance, to flow, that there may be nothing in it but very pure; this Retort place in Sand; apply a Recipient to it, which may be dry and clean, and rectifie it in a graduate heat until nothing more will flow from it; and if the encompaſſing Air ſhould happen to congeal the diſtilling Liquor, cauſe it to melt with a well kindled Coal, drawn by degrees near the neck of the Recipient and the Retort. The Rectification being ended, put the third part of what is diſtilled in a Viol, which ſhall be the ice or glacial Oil of Antimony or its Butter, which hath no other uſe but for outward Applications, to hinder Gangrenes, and the growing of dead fleſh, the dead part being onely rubbed and beſmeared over, either with Cotton-Wool or a Pencil. The ſame may be done alſo upon Peſtilential Boyls, which it will dead immediately, ſo as the ſcar eaſily will ſeparate from it, without any greater mortification of the fleſh; and moreover, the cure is far eaſier. This Oil chiefly is very uſeful for Surgeons to make Cauteries or Iſſues on a ſudden, hinder the rottenneſs of Bones, and advance the exfoliation, wherefore it is alſo a very convenient Cauſtick to bring to perfection the cure of moiſt and weeping Fiſtula's; the two other parts are fit for Emetical Pouder, and Mineral Bezoar, as we ſhall ſay hereafter.

How the Emetical Pouder is to be prepared.

℞ Half of what was left of your glacial Oil of Antimony, and cauſe it to melt, if it be coagulated; if not, pour it juſt as it is in a Pan, where there may be about ℔ iij of diſtilled Rain-Water, and it will immediately precipitate into a body white as Snow, becauſe the Salts which did hold faſt the Reguline and Mercurial part of the Antimony in the diſſolution, joyn now to the Water which is in their Diſſolvent; and ſo forſake the body of the Antimony, even as they had forſaken the ſublimate Mercury in the foregoing Diſtillation. The Precipitation being ended, ſtir all with a Wooden Peſtle very clean, to joyn exactly the ſaline Spirit with the Water; then let it reſt, and the Water being very clear, ſeparate as much as you can by decantation, without ſtirring the bottom, and keep the Water by it ſelf; then pour new Water until the Pan be full, and ſo proceed in the Lotion till the Water comes off inſipid; then ſeparate all the Water by Filtration, and dry the Pouder betwixt two Papers very ſlowly, and ſo ſhall you have an Emetical Pouder white and pure, which by ſome is called *Pouder of Algarot*, from *Algorotto* an *Italian*, which is ſaid to be the Inventor thereof: Others improperly call it *Mercurius Vitæ*, or *Life Mercury*. Some others do honour this Pouder with the name of *Angelick Pouder*, or of *the white Eagle*, by reaſon of its rare and precious Vertues. The Doſis may be from ij *gr.* to vij or viij. It is ordinarily uſed to cleanſe and purge away all the hurtful and peccant humours and matters from the Body, and chiefly in the firſt Region, which this Pouder doth evacuate by Vomiting and Stools; wherefore it is often uſed in the Plague and malignant Feavers, diſeaſes in the Head, Pocks, running pains, cure of malignant Ulcers and Dropſie, wherein it works for the moſt part without provoking to Vomit.

We have ſaid, that the firſt Water in which the Precipitation hath been made, was to be ſet apart, becauſe it is impregnated with the Vertue of thoſe Spirits of Salts which were uſed in the Sublimation of Mercury, and are diſcovered by their ſharp and acid taſte. If the Water be drawn off by Diſtillation in Sand, until it be reduced to three or four ounces of Liquor, you ſhall have that which by Hermetical Philoſophers is called *Philoſophical Spirit of Vitriol*; very efficacious, and of ſingular vertue to put in Julips and Drinks of feaveriſh perſons, and of ſuch as are troubled with Megrims: But above all, it is of wonderful vertue for inveterate pains of the Pocks, becauſe it evacuates and drives away ſufficiently thoſe malignant and ſharp ſeroſities which do prick the Membranes, and all the nervous and ſinuous parts of the Body. And if it be not diſtilled, this Water muſt be kept and mixt in the Drink of ſuch as are afflicted with the Pocks and Dropſie, to ſuch a proportion as to give it a pleaſant ſharpneſs, as you ſhall ſee unexpected effects; becauſe theſe Saline Spirits have kept yet in themſelves ſome Character and Idea of the vertue and efficacy, both of Mercury and Antimony. They that will prepare a leſs violent Emetical Pouder, and a more efficacious Mineral Bezoar, muſt diſtil their glacial Oil with good Antimonial Regulus, but they ſhall then have no Cinnabar.

Preparation of the Mineral Bezoar.

℞ The laſt parcel of your Antimonial Butter; which having weighed, put it in a capacious Matraſs; and then throw upon it its equal weight of very good Spirit of Niter, drop by drop in the beginning, by reaſon of the quick action of this Spirit upon the matter, and of the ſubtil and ſtrong Vapours iſſuing upon a ſudden from the Veſſel, which might be hurtful to the Artiſt; thus proceed by little and little, until you have put all in; and after the Diſſolution is ended, and the Liquor begins to look clear and defecated, pour it into a Cucurbit, which place in Sand under a Chimney, and let the Spirit vapour away to a dry bottom: which done, pour again as much Spirit of Niter as before, but then the action will ceaſe, becauſe the foam and froth of the Dragon is already mortified by the Spirit of the Infernal *Cerberus*; make it likewiſe evaporate to a dry bottom, and pour again the ſame weight (of Spirit of Niter) for the third and laſt time; and evaporate it alſo, until what remains in the bottom of the Cucurbit becomes fair, white, dry, brickle and inſipid; but in caſe there ſhould remain yet ſome pleaſant ſharpneſs in it, it can be of no prejudice: wherefore it will be needleſs to encreaſe and urge the fire higher; but contrariwiſe, take off the Veſſel, and let the matter cool, which is your Mineral Bezoar; this put in a Viol to keep for uſe. It is a great Alexitery, which works againſt all manner of venom, and from this excellent vertue it took the name of *Bezoar* by excellency; to which was ſuperadded the name of *Mineral*, to difference it from *Animal Bezoar*: to which is attributed alſo, a great power and faculty to reſiſt Poyſon; but it comes in no way near the goodneſs or vertue of our Antimonial Remedy, which poſſeſſes yet many other vertues and eſſential proprieties, by reaſon of the Solar Sulphur which is in it, the efficacy whereof is not to be exhauſted: for this rare Medicine doth potently expel by Sweat and Urine, but chiefly by inſenſible tranſpiration, all the hurtful and poyſonous humours lurking in the Bodies both of healthful and ſick perſons, and eſpecially in all Diſeaſes where Sweat is abſolutely neceſſary. Briefly, I can affirm with a conſtant truth, that whoſoever will make uſe of it, ſhall never find himſelf ſoon or late diſappointed of the benefit and help which he expects. In caſe the Diſeaſe proceeds from the Waters and ſuperfluous malignant ſeroſities of the Body, ſuch as are thoſe that are predominant in Pocks, Scurvy, Itch and Scabs of the Skin. The Doſis is to be from ij *gr.* to xij; and if neceſſity requires, it may even extend to xx. But thoſe that intend to make uſe of it, muſt have a care to preſcribe to their Patients, Broths of Veal and Chicken made with *Scorzonera* Roots, and keep their bodies ſoluble with Glyſters of plain newly made Urine, putting every third day in the Broths of their Patient, which is to be taken faſting, ℈ j, or ʒ ß of Salt of Tartar of *Sennertus*. But the Artiſt muſt know that *Mineral Bezoar*, is properly nothing elſe but a Diaphoretical Antimony, fixed by the Spirit of Niter, being before an Antimony reduced to Liquor by the miniſtery of Saline Spirits, and ſo it needed to fix it an ingenuous and fiery Liquor, as the Body of Niter doth fix the groſs Body of Antimony; and that as the Diaphoretick is purer and more ſubtile, ſo doth it alſo work quicker and in a leſs Doſis; they that deſire to make uſe of it, ſhall have recourſe to what we have plainly and without diſguiſe delivered of the Vertues of Diaphoretical Antimony. And as this Remedy is Univerſal, ſo may it alſo be ſpecificated, and appropriated to ſome parts, adding any of the Metals, as Gold, Silver, Copper or Tin; the eighth part whereof may be added with the Regulus, and fixed with a triple of pure Niter; or diſtilling the ſame Regulus with three times as much of corroſive Sublimate, and making thereof the glacial Oil, which the Artiſt may fix with three ſeveral Solutions and Extractions of the Spirit of Niter, and he ſhall procure by this way, that which is called *Diaphoretick*, or *Solar*, *Lunar*, *Venerean*, *Jovial Bezoar*, the deſcription whereof is found in Authors: It ſufficeth here to have taught the manner of Operation, which is common to all theſe Preparations.

How to prepare the Water or Spirit of Compounded Antimony.

℞ Of well choſen Antimony, common Sulphur or Brimſtone, and well purified Niter, *ana* equal parts; put them into Pouder ſeverally, and then mingle together. This done, have an earthen Retort, in the back of which be a Gutter or Conduit four inches long, and of an inch broad in diameter; this Retort place in a cloſe Reverberatory, ſo as to be encompaſſed and walled in on all ſides, except four Regiſters to draw the fire, and the end of the Conduit to throw in the matter; fit to it a very capacious Recipient, wherein muſt be ℔ j of Water, and lute it exactly; put the fire under the Retort, and by degrees let it grow red hot; then begin to throw in ʒ j of the mixed matter by the Conduit, and ſtop it immediately, and the Recipient will ſoon be filled with Vapours and Clouds ariſing from the inflamed matter; be careful not to throw above ℥ j at once of this matter, otherwiſe you would cauſe all your Veſſels to fly into the Air, by the violence of ſo ſudden an inflammation: Wherefore I do adviſe the Artiſt to make uſe in this Operation of a firſt Recipient of ſtone Metal with three Conduits, the firſt whereof ſhall receive the neck of the Retort, the other two, each a great & capacious glaſs body, called in French *Bellon*, that ſo the Vapours may find more room to extend themſelves in their going out, and neither the Artiſt nor the Operation may run any hazard. Keep up the fire to maintain the redneſs of the Veſſel, and throw in new matter, as ſoon as the Recipients ſhall grow clearer of themſelves; and go on thus until you think you have a ſufficient quantity of diſtilled Liquor. The Veſſels being grown cold, draw the Liquor out of the Recipient, and filtrate it, and diſtil off from it in Sand with a ſlow heat; the Water which you had put in the Recipient, which will carry away with it the greateſt part of the Empyreuma of the Spirit, keep for uſe. This Remedy doth attenuate, cut, ſubtiliate, digeſts and diſſolves all manner of tartarous, ſlimy, thick and viſcous matter, in whatſoever part of the Body it be found; be it never ſo ſtrongly rooted and incorporated in it, expelling the ſame by the appropriated Emunctories, as by Stools, Urines, Sweat and Spitting. Wherefore it is of ſingular vertue againſt Obſtructions of Liver, Spleen, Meſentery, Pancreas, Matrix and Hypocondra's, but chiefly if it be actuated with the Salt of *Mars*. It is adminiſtred, during the ſpace of ſix weeks, in Spring-Water, with a little Sugar, to a pleaſant acidity and ſharpneſs, ſo that from it is made a kind of true Mineral Water, whereof ſick Patients may drink as much as they pleaſe. This ſame Operation may be performed with Tartar alſo inſtead of Brimſtone: but this laſt will be more unpleaſant in taſte then the other.

Liquation or Reſolution of Antimony.

THis Operation is nothing elſe but the Reſolution in the moiſt Air, or in a Cellar, of the skin or feces of Regulus made with Tartar; or you muſt calcine Antimony, Niter and Tartar together, and expoſe to the Air, or put it in a cold Cellar what you find in the Retort. The union of theſe three ſubſtances, flows into a thick and blackiſh red Liquor, which hath no other uſe then to cleanſe and cure corroding and fætid Ulcers, and chiefly fiſtulous and hollow ones. For the Salts do cleanſe and mundifie, and the Sulphur of Antimony is the conſolidative Balſom.

The Extraction of Antimony.

WE are now at laſt arrived to the true volatilization of Antimony, to extract the Sulphurs and Tinctures thereof, which are two of the choiſeſt Preparations that can be made of it; wherefore we would adviſe the Son of Art not to be too forward and haſty in this Work, but to work punctually as Art ſhall require, if he will attain to the deſired end. We ſhall then firſt of all give a deſcription of a ſtrong Lye, with which the Sulphur of Antimony is to be extracted; after which we ſhall teach the Extraction it ſelf; and in the third place, the fixation of the ſaid Sulphur of Antimony. Then we will ſpeak of the Tinctures, and of the wayes of extracting the ſame, giving two ſeveral Examples thereof, to inſtruct the better the Son of Art how to proceed in theſe Preparations, which are of the firſt and higheſt importance, by reaſon of their eminent Vertues, and their great Efficacy.

Deſcription of the ſtrong Lye, by which the Extraction of the Sulphur of Antimony is performed.

℞ Salt of Tartar, Pot-Aſhes, Quick-Lime and burnt-Allom, *ana* equal parts; beat to Pouder each ſeverally, then mix them with double their weight of fire Aſhes, which put in a raw, courſe linnen Cloth, upon an inverted Sieve, placed upon a large earthen Pan; then pour upon it Rain-Water ſomewhat more then luke-warm; cohobate the Water ten or twelve times to impregnate it with the Salts; then filtrate it through Paper, that no impurity may remain with it. Mercury may be purified with it, as well as the Sulphur of Antimony extracted, which is performed in the following manner.

How to Extract the Sulphur of Antimony.

℞ ℔ j of Antimonial Cinnabar; beat it to ſmall Pouder, and throw it in an earthen glazed Pot; pour upon it of the ſtrong Lye to fill up the third part of the Pot; let them boyl together the ſpace of three hours, or ſomething more, putting ſtill new warm Lye in the room of that which vapours away by the action of the fire; ſeparate by decantation the Lye from the flowing Mercury which is in the bottom of the Pot, and let it reſt, and the Sulphur of Antimony will ſettle by degrees in the ſaid bottom of a fair red colour; ſeparate the Lye from it ſoftly, and waſh it with diſtilled Rain-Water, until it comes away taſteleſs; cauſe it to dry gently, and thus ſhall you have the true and genuine Sulphur of Antimony, whereof the following *Panacea* is made.

Panacea *of the true Antimonial Sulphur.*

℞ Some of this Antimonial Sulphur, and very pure Regulus, *ana* ℥ j; beat them each ſeverally to Pouder, and mingle exactly together; this mixture put in a Retort, and pour upon it ℥ iij of well rectified Oil of Sulphur, or as much very good Oil of Vitriol; digeſt them together in a very ſlow heat the ſpace of eight dayes; then place the Retort in Sand and diſtil it to a dry bottom; cohobate that which comes out upon the feces again two times; and laſt of all, drive the fire as high and quick as you can the ſpace of twelve hours, after all the moiſture is extracted. Or elſe it will not be amiſs to break the Retort, after all the Liquor is come over the Helm; and grind the matter found in the bottom, to reverberate afterwards four or five hours upon a Teſt under a Muffel, to drive away all the impreſſions of acid and corroſive Spirits. That which hath been reverberated, put in a Cucurbit, and cohobate four times upon aromatized Spirit of Wine, prepared in the manner we have taught before. This Remedy may be adminiſtred ſingle from j *gr.* to viij, in Cordial Confections or Conſerves; but it is much better if mingled with twice as much diſſoluble Magiſtery of Coral, and given from iv *gr.* to xx, in the ſame Confections or Conſerves, preſcribing upon it a little of good Malmeſy, or ſome other Wine of quick and noble Spirits. This Medicine hath few to be compared with it, in driving by Sweat whatſoever corrupts and ſtains the maſs of the Blood which it perfectly doth purifie, inſomuch as it may be thought fit and ſerviceable for all Diſeaſes that require a ſenſible tranſpiration, and chiefly Leproſie, Pocks, Scurvy, and noiſome eruptions in the Skin of what nature ſoever. The Doſis muſt be repeated according to the fixed nature or volatility of the Diſeaſe; for it equally ſerves againſt Colliquation and Obſtruction, becauſe it ſtrengthens the Spirits, which are the chief Maſters and Directors of all the Functions of Life and Health. Particularly, it is an admirable Specifick in all Peſtilential, Epidemical and Malignant Diſeaſes; for in ſuch it doth much more excellently ſhew its Power and Vertue.

Of the Tincture of Antimony.

BEfore we come to any particular deſcription of the Tinctures, we muſt give ſome general notions to the Sons of Art, which will much contribute to theit information, and make it appear that it were much better to adminiſter without, then with Wine, thoſe Remedies which are extracted from Antimony, becauſe that the moſt volatile part of the Wine doth add ſtill to its vomitive Faculty, and opens it too much inſtead of cloſing and fixing the ſame. They muſt then obſerve generally, that whenſoever they define an Extraction of Antimony, with intent to make it a Cordial, corroborating and diaphoretical Remedy, they muſt never begin either Extraction or Diſſolution by Spirit of Wine, neither by any other volatile ſulphureous Spirit analogal to it; but rather it muſt be done with ſome acid Spirit of a concentrating and fixative Vertue; and after this, reſerve and uſe the Spirit of Wine for the laſt Extraction. Inſomuch as it may be ſaid, that the Tincture of Antimony is nothing elſe but a Diſſolution of ſome part of the ſame Antimony, and the Extraction of its internal and fixed Sulphur. The firſt Operation is performed by the help of an acid Spirit; and the ſecond by the mediation of the Spirit of Wine by digeſtion and circulation, as we will ſhew in the following Practice.

The firſt Antimonial Tincture.

WEE have taught heretofore the true correction of Antimony, and the way to deprive it from all the foul and impure Sulphur which is in it, when we ſhewed the manner of preparing the Glaſs thereof without addition, fair, red, and tranſparent as an oriental Granate, and beat it to an impalpable Pouder, grinding it upon the Porphyry Stone; this Pouder put in a Matraſs, and pour upon it Spirit of *Venus* four fingers high; ſtir it nimbly in the beginning; then put it to digeſt, diſſolve and extract in Aſhes in a ſlow heat, and your Spirit in three or four dayes will contract a fair red colour higher then *Burgundy* Wine; draw off this Spirit by decantation, and pour new in the Room, to extract again the ſpace of three dayes, and thus proceed three times; then filtrate the Tinctures, and put in a Cucurbit in *B.M.* and draw off the Menſtruum in a ſlow heat to the conſiſtency of a thick Syrup; upon which pour three fingers high of good Alkohol of Wine, and ſtop the Cucurbit with its Blind-head, and lute it well; then put this Veſſel in a vaporous Balneo, and let it extract, circulate and exalt there; the Spirit will by degrees be impregnated with the centrical and ſolar Sulphur of Antimony; when it is well and ſufficiently coloured, take it away, and put new in the room, and thus continue until the Spirit of Wine tinges no more; then joyn together, and filtrate all the Tinctures; the filtrated Tincture put in a Cucurbit in the vapour of Balneo, and draw off three parts of the Liquor, and keep the reſt as an excellent and noble Tincture endowed with infinite Vertues; for it is a Soveraign Remedy againſt all inveterate Obſtructions of the Liver, Spleen, and all other parts of the inferiour Belly or Ventricle; as alſo againſt Obſtructions of the Lungs, ſtopping of Monthly-Courſes, Green-ſickneſs, both kind of Jaundice, Dropſie, Ptyſick, Aſthma or ſhort Breath, Pleureſie, Cachexy, Hypocondrical Melancholly; againſt all manner of Ulcers both Internal and External, Leproſie, Plague, Pocks both Great and Small; all kind of Itch and Scabs, Meaſels, and generally whatſoever obſtructs or diſorders the courſe of Health. It purges and drives away whatſoever is hurtful to the Body, by Sweats, Urine, Spitting or Salivation, and inſenſible Tranſpiration. The Doſis may be from ij, to ix or x drops in Spaniſh Wine, or ſome other analogous Liquor, as ſtrong Hydromel, Mead or Malmeſy; they that will make uſe of this Remedy, muſt take it in the Bed, and patiently expect Sweats; the uſe may be reiterated every third day for thoſe that are actually ſick, and once in a month for thoſe that take it by prevention, and to unburthen Nature from the ſuperfluities of ill digeſtions. And as theſe Tinctures can hardly be tranſported from place to place without danger, the reſt of the Spirit of Wine may be evaporated to a conſiſtency of concocted Hony, adding to it ʒ ij of Pouder of Hartſhorn, philoſophically prepared, to every ʒ j of the thick Syrup, and ſo ſhall you have an admirable Confection of Electuary, which may be ſent and tranſported every where. The Doſis whereof may be from iv *gr.* to xx, drinking upon it the ſame Liquors before mentioned; or this Confection ſhall be mingled with a ſpoonful of one of the ſaid Liquors or Drinks, and a Glaſs of the ſaid Drinks over it, obſerving the ſame Preſcriptions as before.

The ſecond Antimonial Tincture.

TO attain to the Preparation of this Tincture, make firſt your Menſtruum; for whoſe compoſition, ℞ well choſen Vitriol, common Salt very pure, and Quick-Lime, *ana* ℔ j, Salt Armoniack ℥ iv; put them each ſeverally into Pouder; and having mixed them, throw in a Cucurbit, pouring over it lib. iij of good diſtilled Vinegar; ſtop the Cucurbit with its Blind-head, and lute it, and ſo make the digeſtion thereof with a ſlow heat the ſpace of a natural day; which done, put all in a Retort, and by a very well regulated and graduated fire, draw the Spirit thereof in 24 or 30 hours. Weigh what is come over the Helm in Liquor, and add as much of dry common Salt to it, and rectifie it in a regulate heat, ſo as all what ſhall diſtil, may come away fair and clear from it, and nothing of muddineſs.

Then ℞ ℔ j of Antimonial Glaſs made without addition, and grounded to an Alkohol upon the Porphyry Stone; put it in a large Matraſs, and pour upon it your diſtilled Spitit, ſtir them together, and put them in digeſtion and diſſolution in Aſhes in an equal heat, and the Glaſs being diſſolved, pour off all what is clear and defecated by inclination, and filtrate the remainder: then put all in a Cucurbit, cover it with a Still-head; lute and place your Veſſel in *B. M.* to draw off the Menſtruum to a dry bottom in a moderate heat; there will ſettle in the bottom of the Cucurbit, a thick, ſlow, viſcous and blackiſh matter; which put in the cold Cellar upon a ſquare Glaſe or Table, to make it flow and diſſolve into an Oil, or to ſpeak more properly, into a red Liquor, which will leave ſome feces on the Glaſs Table. This red Liquor pour into a ſmall Cucurbit, and draw off the moiſture from it in Aſhes till the matter be dry; which take away immediately without delay, before the Air hath got and inſinuated it ſelf into it, and put it in a Pellican or double digeſting Veſſel, and pour upon it of the beſt Alkohol of Wine, dephlegmated upon calcined Tartar; lute the joynts and paſſages of the Veſſel, and put it to digeſt in the vaporous Balneo in Saw-duſt, until the Spirit be tinged with a fair, red, high colour, which draw off and put new Spirit in the place, and thus go on until the Spirit of Wine takes no more Tincture; filtrate all the Tinctures, and draw off the two thirds of the Menſtruum in the ſloweſt heat of *B. M.* and keep the reſt, which is the Tincture, as a rich Treaſure for Health. It is fit and uſeful for all the Diſeaſes, to which we related before, that the firſt was proper; with the ſame Precautions, and the ſame Doſis.

But note, that the Artiſt muſt not throw away the remainder of theſe two Tinctures; but rather keep them to extract the Salt thereof, as we ſhall teach in its place. The Artiſt muſt alſo know, that the red Liquor prepared in the cold Cellar, is one of the beſt Balſoms in the World for curing of Wounds, and all kind of malignant Ulcers, be they never ſo dangerous, but chiefly thoſe that are Pocky, and aqainſt Nodus's; wherefore let him keep ſome portion by it ſelf, to have his recourſe unto it when there is need.

The Infuſion of Antimony.

THE infuſion of prepared or unprepared Antimony, is no very myſterious buſineſs, wherefore we ſhall make but a ſhort reflection upon it, and only ſay, That this Operation produces Emetical Wines, and Ophthalmick Water. Now Emetical Wine hath ſeveral demonſtrations in Writers; for ſome call it *Aqua Benedicta*, or *Holy Water.* Emetical, Antimonial Wine, Sacred Wine, and ſo of other names: Some have alſo made uſe of matters variouſly prepared to make this Remedy, as likewiſe of various Menſtruums; for they have taken ſometimes Antimonial Glaſs, ſometimes Flowers, ſometimes *Crocus Metallorum*, Emetical Pouder, and even crude Antimony; the Vertue of theſe various Preparations hath been extracted, either with Wine, Mead or Hydromel, Beer, Cider, or *Aqua Vitæ.* Moreover, they have made Extracts, Electuaries, Lozenges and Syrups, ſo that they have been diſguiſed under any diſguiſe at the arbitrament of the Author, or liking of the Patient: The Artiſt might of all theſe Materials and Menſtruums, chuſe which he likes beſt; But our advice is ſtill, that he ſhould chuſe the beſt prepared matter, and that which hath leſs of impure Sulphur in it: Wherefore let him take off the Glaſs made without addition; and that he may be yet ſurer of his way, we ſhall teach the manner of yet better correcting it, and preparing therewith ſome Infuſions and Preparations;

by which it ſhall appear, that thoſe that caſt a diſ-reputation upon Antimonial Remedies, were never well acquainted with them, ſince they may be made more ſecure and pleaſant then the eaſieſt and gentleſt purge which may be taken out of Vegetables; and as we have ſaid that Wine did render Antimony too volatile, we will neverthleſs ſhew that it may be extracted with Wine, and yet at the ſame time deprived from that volatile Spirit, which exalts it, and advances too quickly its Operation.

The Correction of Antimonial Glaſs, or Emetical Pouder Corrected.

℞ ℔ xij of Antimonial Glaſs made without addition, and ℥ iij ß of very pure and dry Salt-peter; beat them each ſeverally to Pouder, then mingle exactly together; after this, put a ſmall earthen Pot, not glazed, in a Furnace upon a round Tile; encompaſs it with Fire and Coals, adminiſtring your heat by degrees until it grows red hot; then throw your mixture by ſpoonfuls therein; and when all the matter is in, let it grow glowing hot without melting; then remove away the Pot, and take up the lump, which ſhall be of a yellowiſh colour; beat it to Pouder in a hot Mortar; this Pouder throw in, in a Chopine or almoſt a pint of diſtilled Rain-Water, and ſtir it without delay, that the Niter might quickly be diſſolved; then draw off immediately the Water, and dry the remaining Pouder, obſerving this, that you mingle not the courſeſt part of the Pouder in the bottom of the Veſſel, but content your ſelf with the ſubtileſt part thereof; and ſo ſhall you have ſo gentle an Emetical Pouder, and ſo well corrected, that it may be given either in Infuſion or Syrup, and even in Wine to ſucking Children and aged Perſons, without any fear of the leaſt accident. The Doſis for Children, is from iij *gr.* to ix, in infuſion in boyling Wine in proportionate quantity, which muſt be filtrated in the morning, and ſo adminiſtred to the Patient. The Doſis for ſtrong and more aged Perſons, is from viij *gr.* to ℈ j, with the ſame method and obſervation. But if you will do better, prepare therewith the following Syrup.

The true Antimonial Syrup.

℞ ℥ j of this Emetical Pouder corrected, and put it in infuſion in *B. M.* in a Glaſs Cucurbit, with ℔ iv of well depurated Juyce of Quinces, the ſpace of three or four dayes; after this draw off the clear part of it by decantation, and filtrate the muddy; mix with this Juyce, impregnated with the Vertue of Antimony, lib. ij of Sugar in Pouder; boyl all theſe to the conſiſtency and thickneſs of a Syrup, in a glazed earthen Pan, in the Vapour of a Balneo; and the Syrup being made, add unto it vj drops of Oil of Cinament, and ij drops of Oil of Cloves, well wrought before into ʒ j of Sugar in Pouder. This Syrup is a noble Purgative and Emetick for the moſt tender and delicate Conſtitutions. The Doſis is from ʒ ij, to ℥ j; ℥ jß, to ℥ ij.

The true Emetical Purgative Tartar.

℞ ℥ iv of the corrected Emetical Pouder, before it hath been waſht; mix them with as much of pure and well dryed Tartar; this mixture put in a Glaſs Cucurbit in Sand, and pour upon it ℥ iij of diſtilled Rain-Water; boyl and evaporate them together to a dry bottom; then take up the lump, and diſſolve it in a ſufficient quantity of the ſame Water; filtrate the diſſolution to ſeparate the Pouder from it; then evaporate the filtrated Liquor to a Salt, upon which pour drop by drop very good Spirit of Vitriol, until you ſhall perceive no more of ebullition, nor any noiſe, which is a true ſign that it is ſatiated; evaporate all the ſuperfluous moiſture, until you have a very dry Salt of a pleaſant taſte, which is adminiſtred in Broths, or ſome convenient Decoction; ſometimes it works only by Stools and Urines, but it provokes alſo for the moſt part Vomiting, when it meets with a Stomach ſtuft with ſlime and other viſcous matters which do riſe in the Stomach and Ferment eaſily. The Doſis may be from ℈ ß, to ʒ ß. It is a Remedy which cannot be ſufficiently praiſed nor commended. Our Counſel then is, that the Artiſt prepare his Emetical Wine with this corrected Glaſs, *viz.* infuſing ℥ j ß of his Emetical Corrected Pouder, in ℔ vj of boyling Wine in *B. M.* in a great double or blind Glaſs Body, or in a Pelican the ſpace of 24 hours; then filtrate it afterwards through a Paper, wherein hath been put ℥ j ß of Sugar in Pouder, impregnated with ℈ j of Oil of Cinnament, and ℈ ß of Oil of Cloves; and thus ſhall you have an Emetical Wine, which may be relyed upon, without any ſcruple, and for uſing of which no Phyſician can ever run hazard of being reproached. The Doſis ſhall be from ℥ ß, to iij or iv. The Vertues of theſe three laſt Remedies, you ſhall find with thoſe we have attributed to the other Preparations, both Purging and Emetical, to which we refer him to avoid needleſs repetitions.

Ophthalmick Antimonial Water.

℞ Of Antimonial Glaſs reduced to an Alkohol, or triturated *Crocus Metallorum*, in the ſame manner ℥ ß, put it in a Matraſs with ℥ j of *Florentine Iris* Root, and vj Cloves groſly beaten to Pouder; pour upon Rhew-Water, and Eye-bright, and Fennel-Water, *ana* ℥ vj; place them in a vaporous Balneo, or in the warm Summer Sun to infuſe, and ſtir often the Veſſel during the ſpace of fifteen dayes, which are required for perfecting the Infuſion, and you ſhall have an Ophthalmick Water, with which very few are comparable, for ſtrengthening the ſight againſt ſuffuſions and blemiſhes; and to dry and cleanſe the puſtulous eruptions which grow often in the corners of the Eyes, and in the Lids, and cauſe there a kind of itching and biting inflammation. But that which is moſt to be wondered at is, that this Water cauſes no pain, and yet produces very great effects.

The Salification of Antimony.

WEE ſhall deliver two ſeveral wayes of preparing the Salt of Antimony, as we have done two different manners of extracting the Tincture. For the firſt, Take the remainder of the Antimonial Glaſs, whereof the firſt Tincture was extracted, and mingle it with its equal weight of Brimſtone in Pouder; then calcine them together, in the ſame manner as you did calcine Antimony to prepare Glaſs thereof, and ſtir well the matters until all the Brimſtone be conſumed; but have a ſpecial care not to give too intenſe a fire, otherwiſe the Pouder would melt and return again to the body of Antimony; this done, grind the remainder to an Alkohol upon the Porphyry Stone; put the Pouder in a Matraſs, and pour upon it very good diſtilled Vinegar four fingers high; then put it to digeſt and extract in Sand the ſpace of eight dayes; and drawing off the Vinegar, pour new in the place until all the Salt be extracted; filtrate the Extractions, and evaporate the Vinegar till it raiſes a skin, or what is better yet, till it leaves a dry bottom; diſſolve the Salt remaining in it, in Phlegm of Vinegar; filtrate and evaporate, and thus continue till the Salt be clean and white, and being in this condition, digeſt in the ſpace of fifteen dayes with Alkoholiz'd Spirit of Wine; then draw off the Spirit again ſlowly in *B. M.* and preſerve this precious Salt in a well ſtopt Viol. The Doſis and Vertues whereof we will declare, after we have made a deſcription of the other, as it follows.

The ſecond way of preparing Salt of Antimony.

℞ The black matter remaining after the extraction of the ſecond Tincture, and dry it well in an earthen Diſh; put it without any other previous Calcination in a Matraſs, and pour upon it Spirit of Vinegar very pure and very ſubtil; digeſt them together, and make extraction thereof; Filtrate, Evaporate, Diſſolve and Depurate, as we preſcribed in the foregoing Deſcription; digeſt it alſo with the Spirit of Wine, which you ſhall draw from this noble Salt to a dry bottom, and keep for uſe. This Salt is put in parallel, and as highly valued as the Salt of Gold, becauſe it cleanſes and purifies the Blood, purges the body from all ſuperfluous humours, and all filth; cures Leproſie and Venerean Pocks, doth wonders upon the Gout, digeſts and evacuates, as it were inſenſibly internal Abſceſſus and Impoſtumes; cures all inward and outward Ulcers, and expels and drives away all Agues, but particularly Quartanes. The Doſis is from j to iv grains, in the ſame Liquors, and with the ſame Obſervations as thoſe we have hinted, treating of the uſe of the Tinctures of Antimony; and let no body wonder if we have attributed ſo many noble Vertues to Antimonial Remedies; for beſides that, I have not followed the moſt Hyperbolical Authors, yet I am ſo much convinced of its noble and moſt excellent Vertues and Proprieties, by the Effects that I have ſpoken of, that I openly confeſs, That Man's Life is too ſhort to go through the Anatomy of Antimony as it ought to be done; and that we are too ſhort ſighted, and our capacity too weak to diſcover, or penetrate into the ſecret myſteries which are hidden in it, for Mans ignorance will ever leave a larger Field therein for admiration, then comprehenſion and knowledge.

We have already ſaid above, that our intention was not to ſpeak of the Mercurial Extraction of Metals, and leſs of Antimony; ſome reaſons therefore we have given; to which we add, that although we have exactly proceeded in the experiments of ſeveral directions, both Printed and taken out of Manuſcripts, with all the requiſite care and punctuality imaginable; yet could we never bring any of them to paſs; however we do not proudly and magiſterially deny the poſſibility of this Extraction: We do rather chuſe to leave the feaſableneſs thereof, to the power of Nature, and the perfection of Art, acknowledging our ignorance, or of thoſe which did Pen the ſaid Directions which hitherto we have followed, and leaving the liberty of a further diſquiſition, to them that will give themſelves the trouble thereof.

Of Biſmut, called by ſome White Antimony.

Although this Marcaſſite or Metallick Excrement be not uſed internally in Phyſick, yet it is endowed with very excellent Vertues for outward Applications: Wherefore we will ſubjoyn the Preparation thereof to that of Antimony, becauſe ſome take it for the ſpecies of this Mineral, and call it *female Antimony*; the *French* call it *Eſtain de Glaſſe*, Glaſs Tin; the *Germans*, *Biſmut*; and many only *Marcaſſite*, by way of excellency and diſtinction. We will deſcribe four Preparations thereof, *viz.* the Magiſtery, flowing Liquor, or Oil, and Salt.

The Magiſtery, or Tin-Glaſs.

Prepare firſt a ſtrong Water with equal parts of Salt-peter and common Salt. ℞ ℔ ß of this Water, and diſſolve therein ℥ iv of Biſmut pure and well choſen; filtrate the Diſſolution, if there be any foulneſs in it, and precipitate it with tartarized Spirit of Wine; draw off the Liquor ſwimming above the Magiſtery, and waſh it with diſtilled Rain-Water until it be all dulcified. It is a very good Remedy for all the vices and eruptions of the Skin, and above all, againſt itches; it takes away ſpots and freckles in it, and ſmooths the roughneſs of the Face and Hands. But if you will make thereof a very pure and white Coſmetick, and uſe it either with or without Pomatum; precipitate it with Oil of Vitriol, and you ſhall have an almoſt incomparable White; you muſt dulcifie and dry it to keep for the time of uſe.

The Diſtillation of Biſmut.

℞ ℔ v of Biſmut, as it comes from the Wine, before it has ever felt the fire; beat it to Pouder, and digeſt and macerate it with good White-Wine, in a blind or double Veſſel the ſpace of three dayes; draw off the

Wine after digeſtion, and put new in the place; and thus proceed digeſting with new Wine, until you have ſpent viij or x pints of Wine: finally, pour the fourth part of the Wine digeſted upon this Marcaſſite, upon its own body in a Cucurbit; which place in Sand, and cover it with a Limbeck; draw off the Menſtruum with a moderate heat to a dry bottom; cohobate the fourth part, then the third, and finally the fourth, in the ſame heat to a dry bottom; and when you ſee it yeelds no more moiſture, ſtop the noſe of the Limbeck, and encreaſe the fire, and there will ſublimate and riſe in the head thereof white ſilvered Flowers; which keep without further preparation in a well ſtopt Viol, or if you put them in a Cellar upon a Glaſs Table, they will diſſolve into Oil, or to ſpeak more properly, into Liquor, which keep alſo for its uſes. This done, put all what you have extracted by Diſtillation, in a capacious Cucurbit, to draw off the Spirit of Wine, which may yet be employed in ſome other Operations upon Minerals, and pouring the reſt in a Bottle metal earthen Pan, evaporate in Sand till it comes to a pint; then let it reſt the ſpace of three dayes, and if the Artiſt doth not ſee ſome chryſtallization of Salt to ſhute above it, let him evaporate half of the remaining Liquor away, and throw ſome very clean Straws in the Liquor; which being put again in a cold place, the Chryſtals of Salt will ſtick to the Straw: thus go on in evaporating and chryſtallizing, until no more Salt doth come; dry gently and ſlowly that which you have got, and keep it in a Viol for uſe.

The Flowers are preferable to the Magiſtery for the outward Application upon the Skin, and the Liquor thereof made in cold, takes away all ſpots and freckles from it; the Flowers may be mixt in Pomatum's. But the Liquor and Salt are wonderful Remedies againſt all kind of cancerous and malignant Ulcers, and the cure of Fiſtula's. Briefly, That Surgeon that ſhall be induſtrious enough to apply them to their proper uſes, ſhall find them to be two external Remedies not inferiour to any other Topical Medicament whatſoever; He may alſo mingle them with Injections or vulnerary Waters, with whom he ſhall inject them with Syringes, and waſh and foment therewith Ulcers, particularly thoſe that participate of a cancerous or corroding Nature: for this Mineral is endowed with a volatile Sulphur, and a balſamick Salt, which cannot ſufficiently be eſteemed for ſoftening and allaying of pain, and mundifying and bringing to a full cure the moſt deſperate and malignant Ulcers.

SECT-

SECTION V.

Of SALTS.

WEE may ſay in general,that Salts are nothing elſe then Minerals diſſoluble in Water, and which after evaporation of the ſaid Water, may be reſtored into Salt. But as we ſpeak not here of Salts, as they are principles and cauſes of Phyſical Generations; ſo will we onely deliver plainly our mind concerning Mineral Salts, either natural or artificial, which are uſed in Phyſick, and afford many very good Remedies, and many excellent Diſſolvents by the help of Chymiſtry. And as we have ſpoken before of the Preparation of Animal and Vegetable Salts, ſo have we no more left to do now, then to examine and deſcribe the nature of ſuch Mineral Salts as are natural, and of thoſe which though artificially prepared, keep ſtill in themſelves the Character and Idea of mineral natural Salts. We muſt neverthelefs ſay ſomething of their Original in general tearms, before we come to the particular deſcription, and ſo give a general Idea and Proſpect of ſuch Operations as are performed upon Salts.

The Original and Spring of Mineral Salts, cannot otherwiſe be conceived then intellectually, and by the compariſon which a natural Philoſopher muſt make of ſenſible and known things, with thoſe that are hidden and removed from Knowledge. For as he can perceive ſome ſalinous Subſtances to be generated in Animals and Vegetables, from the ſuperfluity of their food and nouriſhment, or by ſome action of their internal heat, or coagulation of their Tartar naturally coagulable; even ſo doth he conceive the great World to be filled with a ſpirituous and luminous ſubſtance analogous to food, which maintains the generation and production of all things by the help and miniſtery of heat; and when this ſpirituous and lucid Aliment hath once ſtamped his Character and Efficacy in any ſubſtance or place, and that it begins to contract a heat in it ſelf, and to overflow, the Mineral Salts are generated; and according as the Matrices where this coagulation is made are different, ſo likewiſe are produced Salts of a different and diſtinct nature; ſuch as are common Salt, Salt-Gem, Allom, Salt-peter, Vitriol; to which is added likewiſe Armoniack Salt, though preparad by Art. The Preparations of Salts in general are, *Purification*, *Calcination*, *Diſtillation*, *Sublimation*, *Fixation* and *Liquation*. We will give Examples of all theſe Operations, when we deſcribe every one of theſe Salts in particular, the better to inſtruct the Sons of Art, and proceed ſtill as we have done hitherto, with the leaſt poſſible confuſion.

Of Common Salt, and its Chymical Preparation.

COmmon Salt, is nothing elſe but that ſubſtance which cauſes the Brine of Water, whether it belongs to the Sea, or ſome Spring yeelding the ſame; and the Water being evaporated away, leaves that which we call Common or Kitchen Salt: And though under this general Appellation many Species be included, yet the beſt of all them is that they call Sea-Salt, or Bay-Salt; and particularly that which hath been dryed up in ſaltiſh Marſhes, by the vertue of the Sun-beams, and the ſalifick Ferment which is peculiar to the ſoil of thoſe Marſhes, after they have been impregnated with impreſſions and particles of the Light; Wherefore our Counſel is to the Sons of Art, ever to make uſe of that kind of Salt, whenſoever they find the name of Salt mentioned in any Author, or ſome practical Manuſcript; and as *Sal Gem* is nothing elſe but a natural concretion of Common Salt in ſome Matrix of the Earth, ſo think we unneceſſary to give him any peculiar Preparation, ſince the way of preparing it is the ſame with Common Salt.

Purification of Common Salt.

THis Purification, is nothing elſe but a Diſſolution of the Body of the Salt upon which your Operation is intended, whether in Rain or Spring-Water, to ſever from it ſome earthly foulneſs and impurity, which might communicate ſome ill quality to the Remedies intended to be made therewith. The Diſſolution muſt be made in a proportionate quantity of Water, and in a moderate heat; after which, percolate the Diſſolution, being warm, through a linnen cloth Bag, or a Filter or Blanket; and if you will proceed more exactly, filtrate through a Paper, and let the Salt ſhute into Chryſtals; then proceed in evaporating the Water to half conſumption, and let the Chryſtals ſhute again in the cold, until you have got all your Salt pure and clean; which cauſe to dry, and put in a Box or ſmall Barrel very cloſe, and keep it in a dry place for your Operations.

The Calcination of Common Salt.

THere are two kinds of Calcinations of Salt, *Decrepitation* and *Fuſion*. *Decrepitation* is nothing elſe but the Calcination of Salt in an earthen Pot, not glazed, with a circular fire, until the Salt makes no more cracks or noiſe; the end of it is, by reaſon of mixing the Salt with other Subſtances in ſome Operations, and becauſe when the fire works upon it, it crawles, leaps and ſtirs, and ſo might ſcatter and diſcompoſe the ſaid ſubſtances joyned with it, which happens not when it is decrepitated; beſides, that this Calcination deprives it alſo from its phlegm and moiſture; but if it be too much urged by the fire, the acid Spirit flies alſo away: wherefore the Artiſt muſt here govern the fire gently and with diſcretion, to make it rather a violent Exſiccation, then ſuch a Calcination as might bereave the Body of the Salt from its active Spirit.

The Calcination made by *Fuſion*, is nothing elſe but the melting of the decrepitated Salt in a Crucible in the Wind-Furnace; if this Salt be kept melted in a warm and dry place, it will preſerve it ſelf in a lump, to be uſed when there ſhall be occaſion; But if it be expoſed to the Air, it diſſolves in Water, which muſt be filtrated and put in a Bottle; it is that which *Paracelſus* calls *Sal ſolutum & aqua Salis*, diſſolved Salt, or Water of Salt. There is beſides a third Calcination of Salt, called the *fixatory Calcination*, which is made with equal parts of Common Salt and Quick-Lime, which is put in an earthen unglazed Pot; and being exactly covered, place in a Wind-Furnace in a violent heat until it melts to a lump; which done, ceaſe the fire, and diſſolve the lump in Rain-Water; filtrate and evaporate to a dry bottom, and reiterate ſo often this Calcination with Quick-Lime, that at laſt it may become a fuſible Salt, which is uſed for extracting the Tincture of Metals, upon which proceſs the Sons of Art may make their reflection, for this is not without ſome myſterie.

Having delivered the manner of theſe general Preparations, we muſt ſay ſomething in general alſo of the *Vertues of Common Salt*, before we come to the particular Application of thoſe that are found in each particular Preparation. Common Salt is generally good for cleanſing all rotten, putrid and hollow Ulcers, to reſolve all Tumors and Boyls, but chiefly Peſtilential Sores; it allayes the fire of Burnings, dryes Scabes and

Itch, takes away Mange, reſolves extravaſated Blood, and removes the lividity or blewiſhneſs of Contuſions and Bruiſes, aſſwages the Tooth-ach and pains of the Head and Gout: but for all this, the uſe is only external, mixt in Water, Vinegar or Urine, according to the Diſtemper; the beſt for all theſe purpoſes is that which hath been melted without addition, becauſe its internal Sulphur begins to produce it ſelf, as it appears by the redneſs of its colour. But if Salt hath many Vertues in outward Applications, it poſſeſſes no leſs eminently ſeveral remarkable ones internally uſed: for it doth heat and dry, cleanſes and purges, hath a gentle aſtriction, conſumes ſuperfluities, penetrates, digeſts, opens, cures Phlegm and tough Humours, provokes Luſt, reſiſts Putrefaction and Venoms: Wherefore it is of ſingular uſe to correct the crudities of the Stomach, quicken Appetite, and helps the recovery of it, when loſt; removes obſtructions of the Belly and Reins, and is good againſt Griping of the Guts and Chollick: Finally, according to *Baſilius*, it it the nobleſt and beſt of Aromats, and the true Balſom of Nature.

The Diſtillation of Common Salt.

ALthough many Artiſts have ſpent their Philoſophy and Meditation upon the Diſtillation of Common Salt, and that *Glauber*, amongſt the reſt, hath taught a way to extract a great quantity of it in a ſhort time, yet have I found no ſurer nor quicker way, or leſs intricate and more eaſie to put in practice, then that which I ſhall now teach. But before we come to the deſcription of it, let us make ſome neceſſary Notes: for is it not firſt a very ſtrange thing, that the moſt part of thoſe which deſcribe this Operation, will have the Salt to be decrepitated; but as we have ſaid before, that violent Exſiccation, not to ſay Calcination, ſeparates and takes away from the Salt its volatile Spirit, Phlegm, and almoſt alwayes the beſt part of its acid Spirit, which ought not to be done, ſince the volatile Spirit and Phlegm have alſo their uſes in Phyſick, and it is not fit the Artiſt ſhould want of Skil and Knowledge, and loſe that which he may eaſily preſerve without any way endangering his Operation, provided he obſerves well the degrees of fire. The Artiſt muſt alſo note in the ſecond place, That ſome do mix Salt with the heterogeneous matters, pretending thereby to facilitate the diſtillation thereof; as for Example, Burnt-Allom and Colchotar of Vitriol; but they do not conſider, that by this means they alter and change the Vertue of the

Spirit of Salt. Some other do mix ordinary Clay,taking no notice that oftentimes this Earth is impregnated with ſome mixture of Metallick or Mineral Seed, as it is evident by the ſmell of the Smoak, Phlegm of Kills where Bricks or Tiles are ordinarily baked, and likewiſe of Potters Furnaces; ſo that all things well conſidered, the Artiſt muſt chooſe ſuch kind of Earth or Clay which may be of a moſt fixt nature, and contribute the leaſt of its quality to the Spirit of Salt: Now amongſt all the ſeveral kinds, that which is called *Sigillated* or *fine Bolus*, are of a nature which cannot at all bring any alteration to the Salt, unleſs to the better: Wherefore we would have either of theſe two uſed for the diſtillation of this Spirit; which is made as we will now declare, ſo as to hinder the fuſion or melting of the Salt.

How to make and duly prepare the Spirit of Salt.

℞ ℔ ij of Common Salt purified, beat it in a Marble Mortar, and mix it by parcels of ℥ ij at once, with ℥ vj of fine Bolus or Sigillated Earth, and all the mixture being exactly done, knead it and incorporate it with Water of Salt, which is melted Salt diſſolved in a cold Celler, and thereof make a kind of Paſte, whereof frame Pellets to be dryed in an Oven, after the Bread is removed, or in the heat of the Sun; break one of the Pellets to know whether it be dry to the very Center; and that being ſo, fill up with it a great earthen Retort very well luted; and having placed it in a cloſe Reverberatory, fit a large and capacious Recipient to the neck thereof; which lute exactly, and cover the Furnace, leaving a Regiſter in the middle above the Retort, that the fire may the better circulate about it. The Lute being well dryed, give it firſt a gentle fire fit to warm only, and modifie both the Matter and Veſſel; and when the drops ſhall begin to fall, and the body of the Recipient to grow warm, proceed ſoftly and gently in your work; for it is a ſign that the volatile Spirit of Salt, begins to free and diſ-intangle himſelf from the Body; and as it is a ſubtil and fiery Spirit, you muſt ſtop the Regiſter, and moderate the fire, until the firſt rage of it be allayed, for it is at that inſtant and nick of time that the whole Operation runs more danger, becauſe this ſulphureous Spirit is coagulated with difficulty; this will laſt ordinarily four or five hours, after which the acid ſpirit begins to come forth, which appears by vapours and white clouds which fill up the Recipient; then may the Artiſt freely encreaſe the fire without fear of any danger, and continue it ſtronger and ſtronger, until the flame comes forth through the Regiſter, and the neck of the Retort appears red as fire through the body of the Recipient; this Operation cannot be well compleated in leſs ſpace then of thirty hours; after which ceaſe the fire, and the next day open your Veſſels, wherein you ſhall find in the Recipient a Liquor mixt with the volatile Spirit the Phlegm, and the acid Spirit of the Salt; ſome do add to this the Oil of Salt, but improperly. Pour all theſe into a Cucurbit, and place it in *B. M.* to draw off the volatile Spirit which aſcends firſt, having a ſulphureous ſmell, and frames ſubtile and crooked Veins in the head of the Limbeck, receive it as long as theſe come forth; and when you ſee the Veins to grow ſtraight, and the drops falling to have none of the ſmell or taſte of the volatile Spirit; change the Recipient to receive the Phlegm, and encreaſe the fire ſtronger then before, becauſe it doth not ſo eaſily aſcend as the volatile Spirit; and when the diſtilling drops ſhall have an acidity, ceaſe the fire; for it would prove too great a toyl to endeavour to raiſe the acid Spirit by reaſon of its heavineſs in *B. M.* the heat whereof is too weak and inſufficient for this purpoſe. If the Artiſt hath a deſign to apply the acid Spirit of Salt to phyſical uſes, he needs not rectifie it any more, for it hath an excellent and very pleaſant acidity, as it comes out of *B. M.* wherefore he may preſerve of this a third, or one half part for his uſe, and put the Cucurbit in Sand to draw the other half by Diſtillation; and ſo ſhall he have a true acid Spirit of Salt very clear and very pleaſant, and that which remains in the bottom of the Cucurbit, will be of a yellowiſh colour, heavy, and of a biting and violent ſharpneſs, fit to be uſed in the diſſolution of Metals, and chiefly Stones; this is that Subſtance which improperly is called *Oil of Salt.*

We have noted here all the circumſtances of the Diſtillation and Rectification of the Spirits of Salts, that we may have no need to make unneceſſary repetitions thereof when we ſhall ſpeak of other Salts, ſince whoſoever can exactly well draw the Spirit of Salt, can never be miſtaken in the diſtillation of others. So that we have no more to do now, then to add the Proprieties and Vertues of ſeveral ſubſtances drawn and proceeding from the Common Salt.

Firſt then, *The volatile ſulphureous Spirit,* is a good Cephalick and Sudorifick, wherefore it may be given from ij p. to x, in Broths and appropriated Waters, to thoſe which are troubled with Meagrim, or any other Head-ach; it is alſo very excellent to be mingled in the ordinary Drink of Feaveriſh or Aguiſh Perſons, allaying Thirſt, and aſſwaging their Reſtleſneſs. They may alſo have Frontals applyed, made with the Phlegm, that have inveterate pains in the Head, and not ſleep, through too much heat and diſquietneſs. But above all things, the Phlegm is excellent to waſh Wounds and Ulcers, which it wonderfully doth cleanſe without pain or grief; but contrariwiſe, it appeaſes it, if there be any. It is alſo a wonderful fomentation for the ſwollen Joynts & pained Limbs in gouty people, provided you mingle a little of its volatile Spirit, and a little of Salt of *Saturn* with it. The *acid Spirit of Salt*, is diuretical and good againſt Gravel and Stone; it reſolves and drives away powerfully Tartarous and Muſcilagineous Subſtances from all the parts of the Body; wherefore it is of very good uſe to open all Obſtructions of the Liver and Spleen, and generally all the parts of the Ventricle; is ſingular againſt Dropſie, for it quenches the thirſt of the Patient; It is alſo wonderful againſt Jaundice, ebullitions of Blood, driving away by Urine the cauſes of both Diſeaſes; it is of a ſoveraign efficacy to ſtop Gangrenes, and to reſiſt all manner of Corruption and Putrefaction; mixt with Oil of Turpentime or Oil of Wax, it appeaſes the ach and grief of the Gout, diſſipating the Tophus's and Nodoſities thereof; it quickens again, and cures alſo the contraction of Members and withered Limbs, and doth remedy their Atrophy.

We have ſpoken before of the ſweet Spirit of Salt and tempered Water, when we made mention of Coral, and of its Tincture; where alſo we did relate its Proprieties and Vertues; wherefore we ſhall not uſe vain repetitions here. We will only add one Diſtillation more of an extraordinary Spirit of Salt, very Philoſophical, and which is altogether endowed with a particular Vertue.

The Eſſential and Stomachical Spirit of Salt.

℞ Of purified and very dry Salt, calcinated in open fire in a Crucible to whiteneſs; put it in a Matraſs, and imbibe it with Oil of Salt, which is the laſt Spirit remaining in the Rectification in the bottom of the Cucurbit; make the imbibition by little and little, ſtirring the Veſſel until the mixture be reduced into a clear Pap; Lute the Matraſs with a Blind-head, and put it to digeſt in Aſhes, in a moderate and equal heat, until the Oil of Salt be well united with the calcined and deſiccated Salt; then begin again the Imbibition, Digeſtion, Union and Extraction, ſo often, that the Salt refuſes to receive any more of, and be ſatiated with this

Oil, which muſt ſwim above it without penetrating; but the true concluding ſign that this Salt will be ready fitted for diſtillation, is the turning of its colour into a fair golden yellow colour; and having contracted a pleaſing and a ſweet ſmell, which when it hath, put it in a Retort, and diſtil in a well graduated fire, and there will come out a very white ſmoak and clouds, which by degrees ſhall turn into Liquor; the Diſtillation being ended, rectifie this Spirit in *B. M.* to ſeparate the Phlegm thereof, and you ſhall have an Eſſential and Stomachical Spirit of Salt, with which none is to be compared in Phyſick, to ſtop in a moment, and as it were miraculouſly, all fits of Vomiting in any accident or Diſeaſe whatſoever. Some are of Opinion, that this Spirit is capable to extract and draw the Tincture of Gold to it ſelf, without a full diſſolution or diſunion of the whole Body. The Doſis is from j to iv drops, in ſome Broth, or a ſpoonful of Syrup of Pomgranates, or rind of Oranges, or in a little Wine.

The Preparation of the Sweet Chryſtals of Common Salt, or the Coagulated Spirit of Salt.

YOU muſt chuſe firſt a capacious and large Retort, made of good Earth, capable to reſiſt fire, and not porous; the neck of the Retort muſt be three fingers broad in diameter, that the Spirits iſſuing forth in abundance may have a free paſſage; let it alſo have a Channel or Conduit in the upper part made Funnel-like, onely five inches high, with a very cloſe and well fitted ſtopple, eaſie both to be ſhut and drawn off again with the ſame eaſe, and without ſtirring the Retort; moreover, this Retort muſt be walled in a cloſe Reverberatory, having four Regiſters in the four corners, the Channel or Conduit-pipe of the Retort being juſt in the middle; all this being ſo fitted and prepared, throw into the Retort ℔ iv of Bay-Salt well purified and well dryed; put a large round Glaſs Body, or *Ballon*, to the neck of the Retort, with ℔ j of diſtilled Rain-Water in it; lute exactly the Joynts, and let the Lute dry very well, that no crack may be in it; then begin to give it a gradual fire, which encreaſe to that height, that it may leave the Salt in fuſion in the Retort; this done, throw into it j or ij drops of cold Water with a Feather, by the upper Pipe or Channel, and ſtop it immediately; it will yeeld great ſtore of Vapours which will come over into the Recipient, and the Recipient being cleared, begin again to throw j or ij drops more of

Water at the moſt ; for otherwiſe the Veſſel might fly up, and the Artiſt run hazard to be hurt ; keep up the fire in this height for preſerving the Salt in fuſion, and proceed in throwing of Water by drops until it be turned all into Spirits and Vapour ; which done, let the Fire ceaſe, and the Veſſels cool. Put whatſoever is found in the Recipient in a Cucurbit in *B. M.* if ſo be you find it pure and clear ; if not, filtrate it before you draw off the Phlegm, and diſtilled Rain-Water which was added ; then try in a cool place if any Chryſtals will ſhute, which if you find, ſeparate the Chryſtals which are ſweet and of a pleaſant taſte, and proceed in the extraction of ſuperfluous moiſture and chryſtallization, until it yeelds no more Chryſtals : Keep ſome part of theſe Chryſtals in a Viol very exactly ſtopt, becauſe they may ſo be more ready and eaſie for tranſportation, and put the reſt in a Cellar to diſſolve into a Liquor, which will be of the ſame vertue and efficacy ; but the Doſis muſt be a little bigger. Both Chryſtals and Liquor are two good Diaphoreticks or Sudorificks, allaying altogether the thirſt of Hydropical Perſons, and reſtoring to their languiſhing Bodies,that eſſential moiſture which is daily conſumed and preyed upon by that undermining Diſeaſe, ſtrengthening their digeſtion, and reſtabliſhing all the Intrals which ſuffer by it and are altered ; briefly, it is a true Vital Balſom in all other Diſeaſes, and chiefly in the Plague, and all Malignant and Burning-Feavers. They are alſo good Topical Remedies to mundifie evil Ulcers, and reſolve Tumors and Swellings.

Of Niter or Salt-peter, and its Chymical Preparation.

ALthough there are many that take Salt-peter to be an Univerſal Salt, believing that it poſſeſſes in it ſelf the Soul of the World ; yet we are of a different Judgment, if by Niter or Salt-peter is underſtood that Chryſtalline Hexagonal Salt, which is uſed in the making of Gunpowder. But if by Niter or Salt-peter be underſtood a Myſterious Salt, which is the ſoul of all Phyſical Generations, a Child and Son of Light, and the Father of all Germination and Vegetation ; we confeſs that Salt in ſuch a reſpect to be Univerſal : But we ſay at the ſame time, that it is more to be apprehended by the Intellect then the Senſes, and that this Divine Salt cannot be comprehended nor hidden under any other covering or ſhape, then of the Sulphureous and Mercurial Volatile Salt of all natural Bodies, ſince this Salt is endowed of all the Eſſential and Centrick Vertues of Sublunary Mixts. But as concerning Niter or Salt-peter, which is common in our daily uſe, we do not deny, but that it poſſeſſes in it ſelf much of a Volatile Sulphur and Mercurial Spirit, which have their original from Light, and are folded, wrapt, and ſealed in a courſe and earthly ſaline matter proceeding from the Water and the Earth, which is the reaſon that much of Philoſophy, and much of Work and Operation muſt be beſtowed upon, before any body can attain to the capacity of ſeparating theſe ſeveral ſubſtances, by diſ-intangling this wonderful Agent from the ſociety of its matter, without loſing or imbezelling any of its Eſſential and Heavenly Qualities. But as it is not our deſign to treat generally of Salt-peter, ſo will we reſtrain our ſelves to ſpeak of it here as only of a Mineral Salt, which is extracted from fat and fruitful Earth. Wherefore a Lye is prepared with Water, which this Salt coagulates with it ſelf, as it appears by the fuſion of Niter, which by the action of the fire loſes all its aquoſity, ſo that there remains in it nothing but the taſte and vertue of an Urinous and Lixivial Salt, which properly is nothing elſe but that fat and fruitful Salt extracted from the Earth, ſeparated by Fire from the Water, which Nature or Art had mixed with it: And this is not one of the leaſt Secrets and Myſteries of Chymiſtry, if it be well heeded and meditated upon. For we muſt confeſs, that Niter is one of the moſt wonderful and powerfulleſt Agents which Nature hath lent to Art, as the Sons of Art may have noted hitherto by thoſe Operations wherein we have uſed it, and may yet note by thoſe we ſhall deſcribe in the ſequel of this Diſcourſe.

We ſay then, That Salt-Peter is a Sulphural Salt, partly volatile, and mixt with another earthly Salt of a ſaline and bitter taſte, extracted from fat Earths or Grounds, and from the Mines of old Buildings; as likewiſe from Vaults of Cellers and Stables, the Earth having received the impreſſion, and being impregnated with the Excrements and Urines of Beaſts, the volatile Salt whereof did joyn and imbody it ſelf with the Salt of the Earth; and theſe two being knit and indiviſibly united together by the power and action of the Light and Air upon it, and of the *Archeus* of the Earth, which is the Director of all Mineral Generations, Chymiſts do call it the *Chymical Cerberus*, the *Infernal Salt*, the *Sulphurate Salt*, the *Dragon of the Earth*, the *Winged Serpent*. Now as we have ſtill begun all our Operations, by charging the Son of Art, ever to be careful of chuſing well his Materlals before he puts them to work; ſo do we here enjoyn him to take very good heed in the choice of his Salt-peter, and would have him capable of ſetting a difference between that which of it ſelf is good, without any previous ſeparation, and that which abounds with fixed Salt, which of neceſſity muſt be depurated and ſeparated from it, that it may be without mixture. The viſible notes of that purity, are the length of the Needles, their whitneſs and tranſparency, and the Hexagonal Figure which this Salt takes alwayes in its chryſtallization: Moreover, there is the taſte which muſt be of a harſh acidity and ſharpneſs, ſomewhat bitter, and ending in a ſaline ſowriſhneſs: Nevertheleſs, all theſe marks are not yet abſolutely concluding for its goodneſs and purity; wherefore the Artiſt muſt have his recourſe to that tryal which is made by fire: Let him then take a burning Coal, and put one or two ℥ of Niter upon it, and ſo let it burn and evaporate into the Air; if nothing remains upon the Coal, the action of fire being over, it is a true ſign of the goodneſs and purity of the Salt-peter; but he ſhall judge of the value and goodneſs, according to the greater or leſſer quantity of fixed Salt which remains upon the Coal. Phyſitians are in debate amongſt themſelves of the firſt qualities of Niter, for ſome believe it to be cold, others contrariwiſe hot; but without loſing time about theſe trifles, we will ſay generally the Vertues of Niter, by the rehearſal of which it ſhall appear that the laſt are better grounded then the firſt in their Aſſertion, ſince it reſiſts Putrefaction, quenches Thirſt, and cools powerfully ſick and languiſhing Perſons, chiefly Feaveriſh Bodies; but it doth not produce ſuch an effect by any cold quality, but rather by the quickneſs and ſubtility of its parts, which inſinuates and cauſes the Patients Drink to penetrate from the Center of the Body to the Circumference; and moreover, becauſe this Salt hath in it ſelf a Sulphur and ſubtil Spirit which recreates and ſtrengthens the *Archeus*, ſo as to diſpoſe him to meliorate and better qualifie thoſe Functions which it does exerciſe: Add to this, that Niter doth cut and attenuate ſlimy humors, and muſcilagineous matters, and tartarous coagulations, which are the cauſe of Obſtructions; it reſolves congealed Blood, and allayes Pains. It is given to Perſons troubled with Pleureſie, hot and putrid Feavers; againſt Gravel in the Kidneys and Bladder, and heats of Urine. The uſe of it is alſo very commendable in Gargels, againſt inflammations in the Throat and Quinſie. It is of very good ſucceſs, outwardly applyed, in Fomentations with Fillets, to take away the heat and grief of Burnings, and other inflammations proceeding from effervency of Blood. But let this ſuffice concerning the general uſes of it, ſince we are to ſpeak more particularly of it in the deſcription of its Preparations, which are *Purification, Calcination, Fixation,* and *Diſtillation.*

The

The Purification of Niter.

℞ ℔ x of common Niter, otherwiſe called of the firſt boyling; put it in an earthen Pot, not glazed; place the Pot in a Wind-Furnace, and give it fire by degrees until the Niter begins to melt; and whilſt it is in fuſion, throw by degrees in it ℥ ij of Pouder of Allom and Armoniack Salt ground together; this will cauſe, at every throwing, an effervency, by which the fatneſs and impurity of the Niter will be driven away, which remove with a hot Iron Ladle; and having done with the Pouder, cleanſe very well the ſuperficie's of the Niter from all impurities; then throw it in a Braſs Mortar very clean and warm; the Niter being grown cold in the Mortar, grind and diſſolve it in Spring-Water in the heat of a clear Wood-fire; then ſtrain it through a Blanket, and pour immediately into this ſtraining, whilſt yet warm, ℥ iv of good diſtilled Vinegar, and put the Veſſel in a very cloſe place, leaving it there the ſpace of 24 hours, and ſo ſhall you find your Niter well chryſtallized in fair, clear and tranſparent Chryſtals; ſeparate the Water from them, and evaporate it by a ſlow ebullition to a reduction of its half; and let this alſo ſhute into Chryſtals in the cold: But the Artiſt muſt here note, that it is neceſſary he ſhould ſtill make uſe of the Niter which proceeds from the firſt chryſtallization, for all the Preparations that are to be taken inwardly; and of the remaining for making of *Aqua Fortis*, and all other Operations which are of leſs conſequence. Dry gently your Niter between two fair Searchers or Sieves turned upſide down, and covered with linnen Cloth or Paper that it may not be ſullied; then put it in very well cloſed Boxes, in ſome warm and dry place, to uſe in all kind of neceſſary Operations, when occaſion ſhall call for, in a Chymical Laboratory.

Calcination of Niter, to prepare the Chryſtal Mineral.

℞ Purified Niter of the firſt chryſtallization, very dry; put it to melt in open fire in a good ſtrong Crucible capable of reſiſting the fire, not apt to crack, and very well reback't; when it is in fuſion, throw by degrees into it ℥ ß of flower of Brimſtone upon each ounce of Niter; this done, throw it in a Braſs Skillet, very clean, and ſtir it, that it may be extended in a flat Table or Cake, out of which Lozenges may be cut: Or, you may form ſmall Rowls thereof with an Iron hot Ladle, pouring it upon a ſmooth Iron Plate, or upon a Marble Stone. If you will not take ſo much pains, pour only this Niter, ſo prepared and melted, in a clean and warm Mortar. Now I take this Calcination rather for a Reiteration of Purification, then a true Preparation of Chryſtal Mineral; wherefore you muſt have Water diſtilled of the Juyce of Wilde Endive, Bugloſs or Borrage; and in a convenient portion of this Water, melt this pretended Chryſtal Mineral, and filtrate it through a Paper filled with Province or Damask Roots, or Bugloſs and Borrage Flowers, made wet before with a little Spirit of Sulphur, Salt or Vitriol; and thus ſhall you have a Mineral Chryſtal pleaſant as to the taſte, colour and vertue, endowed really with thoſe proprieties and that efficacy we have attributed to Salt-peter. But above all, it will be a true Anodyne, and an excellent allayer of Thirſt and Reſtleſneſs to Aguiſh and Feaveriſh Perſons, to whom may and muſt lawfully be given the name of *Lapis Prunella*, or *Sol Prunella*; for it is a Soveraign Remedy againſt thoſe malignant and putrid Feavers, which are called *Fieves Prunelles*, or Burning Feavers, becauſe *Prunella* in Latin ſignifies a Burning Coal. The Doſis muſt be from ℈ ß to ℥ j, in the ordinary Drink of the Patient, ſome Decoction, Broth, or diſtilled Water appropriated to the Diſeaſe. This Chryſtal Mineral, is a general Remedy, that may be ſpecificated by the addition of ſeveral Salts which may be united and incorporated with it, as the Salt of *Saturn*, whereof we have ſpoken treating of Lead, Salt of Pearls, Coral, and ſo of others; and thus may you have a Cordial, Hepatick, Splenetical or Stomachical Chryſtal Mineral, according to the faculty and vertue of the Salt which you have joyned and coagulated to your well prepared Niter.

The Fixation of Niter.

MElt ℔ vj of very pure Niter in an Iron pot in open fire; throw in it continually, by ſmall parcels, Charcoal-Duſt, which will immediately take fire, and ſoftly conſume, by the action of its fire and ſulphur, the wateriſh moiſture which the Salt of the Earth had coagulated & united to it ſelf in its chryſtallization; continue this throwing of Coal-Duſt, until you find it will kindle no more, and that the remainder of the Niter begins to thicken and turn to a blewiſh and greeniſh colour; then ceaſe this Operation, and take off this Salt out of the Pot, and put it in a warm Mortar: and if the Artiſt will preſerve any of it whole, let him put thereof as it is hot and dry in a Bottle, and ſtop it exactly with a ſtopple dipt in melted Wax. This is true fixed Niter, much altered from its firſt nature; for it is no more volatile and apt to be turned into Chryſtals, but contrariwiſe turns, expoſed to the Air, into a Liquor which is ſubtil and penetrating; hath an urinous and lixivial taſte like unto Salt of Tartar, but yet more biting and penetrating. We are beholden to *Glauber* for the invention of this Liquor, who hath given us the deſcription thereof under the name of *Liquor Alkaheſt*, fit to draw the Tinctures of all natural Bodies, whether Animals, Vegetables or Minerals; and to ſpeak truly, this Liquor hath in it ſomething very conſiderable, being capable of extracting the Sulphurs of Metals, provided they have been well opened before; thoſe of Minerals do eaſily yeeld unto it, from whence it may be concluded, that it takes in an inſtant the Sulphurs and volatile Salts of Animals and Vegetables. If any Chymical Artiſts have a curioſity for theſe noble Operations, they ſhall find them in the Book which this great and famous Artiſt hath given us thereof. But there is left much matter of Speculation and Philoſophy upon this fixation of Niter, which is made by the vegetable Sulphur of Coals, which doth change it into the nature of Salt Alkali, whoſe taſte is urinous and lixivial; this Salt being capable of fertilizing the worſt Earths, if the Seeds to be put in be prepared with a Liquor made of this Salt, and ſome other Ingredients; this admirable Salt ſo nouriſhing and invigorating the Bud or Sprout of the Seed, that it multiplies to ſo high a number, as to ſeem altogether Hyperbolical and fabulous, to thoſe which apprehend not the hidden Myſtery which Nature doth extract from the light of Spirits and Salts, and how the Sperm of the Seed finds in this ſaline Liquor that which is analogous to its principle, doth greedily ſuck and attract it; for which reaſon, being as it were double ſtrengthened, it ſhoots and puts forth a more vigorous and numerous Stalk, yeelding Ears and Grains of Corn above all belief, as it hath been ſeen and tryed in *Paris* ſome years ſince. But to make this Aſſertion more plain and palpable, let us reflect upon the practice of the Husbandman in *Britany*, and the Forreſt of *Ordermes*; who meeting with unfruitful and barren Grounds, producing nothing but Heath and Fern, a kind of wild Flag and Broom, uſe to pare off the upper part or moal of their Ground, pluck off the Broom and Fern, and drying all in heaps, ſomething diſtant one from the other, ſet it on fire, leaving after the heavenly influences and Rain to work upon this calcined Earth, containing the Alkali of all the Plants fixed by their own Sulphur: This Alkali aſſiſted by the Sulphur, hath contracted a fatneſs and clammy moiſture, heavy and of ſlow motion, which communicated to the lightneſs, dryneſs, and too great poroſity of the Earth, cauſes it to keep with it a kind of greedineſs and delectation, a pleaſant ſubſtance and nouriſhment; and as ſoon as the Rain doth abound and exuberate, it cannot ſo ſoon be disjoyned from it, neither carried away by the violent heat of the Sun, by reaſon of its fixedneſs; and ſo it comes to paſs, that when theſe Husbandmen have Plowed and Sowed their Grounds, they reap ſtore of Rye for the firſt year, and Oats in the ſecond. We brought in this Story, only to the end that the Artiſt may reflect with his Meditation upon this Salt, and note the better its worth and excellency, which proceeds from nothing elſe but the myſtery of Nature contained in the Salt-peter, which he muſt ſeek by his induſtry how to free and diſ-ingage.

To make the Solar Diſſoluble Earth of fixed Niter.

℞ ℔ j of the fixed Niter which you kept in a Bottle; pour upon it ℔ ij of very good diſtilled Vinegar; put it in Aſhes to digeſt 24 hours; then diſtil and draw off the Liquor to a dry bottom, and your Vinegar will aſcend taſteleſs and inſipid; reiterate in the ſame manner the ſame Operation with new diſtilled Vinegar, until the Vinegar comes off with the ſame ſharpneſs as you did pour it on; then dry it well, and diſſolve it in very good alkoholized Spirit of Wine; filtrate and digeſt them together during the ſpace of 4 natural dayes; then diſtil in *B. M.* to a dry bottom, drawing off the Spirit of Wine again, which you may yet uſe afterwards in all other Operations. Put after this your Cucurbit wherein lyeth the Salt in a Sand-Furnace, and give it a good fire, ſo ſhall the Salt cleanſe it ſelf from all remaining impurities, and ſettle in the bottom into a ſubſtance ſomething reſembling Calk, white, of a good and pleaſant taſte, and diſſoluble in all manner of Liquors, melting in the heat like Wax. It is one of the beſt Remedies amongſt Chymical Preparations, for it opens all Obſtructions, and purges gently and without prejudice, and giving offence to the digeſtive faculty of the Stomach, both by Stools, Urins and Sweats. It corrects the malignancy of all Purgatives, and encreaſes their ſtrength in double proportion; it is one of the moſt Soveraign Medicaments that can be made uſe of againſt chronical & obſtinat Diſeaſes. The Doſis may be from ℈ j to ℥ ß, and ℈ ij, in infuſion of Rubarb made with this Salt, a little of Cinnamon and White-Wine, or in Broth.

The Diſtillation of Niter, and how to prepare the Spirit of Niter.

℞ ℔ ij of depurated Salt-peter; grind it by little and little with ℔ vj of common Bolus; and being thus well mixt, make a Paſte of it with Water impregnated with as much pure Salt-peter as it is capable to diſſolve in the cold; knead and work well the Paſte, and rowl it, to make Pellets therewith fit to be put in a great earthen well luted Retort; which place in a cloſe Reverberatory, and fit a capacious Recipient to the neck of the Retort, exactly luted with a ſalted Lute. The Lute being dry, begin to give it your fire by degrees; and thus proceed the ſpace of 20 or 24 hours, with the ſame graduation as we have taught in the Diſtillation of the Spirit of Salt. There is nevertheleſs this difference between them, that Salt-peter alone yeelds red Spirits, by reaſon of its ſoul and internal Spirits, which are Children of the Sun, for all other Salts ſend forth only whitiſh Vapours; This is that Spirit which antient Philoſophers have called the *Salamanders Blood*, as if one ſhould ſay, the Blood and Soul of Fire. This is the moſt ordinary way of preparing the Spirit of Niter, to uſe in all diſſolutions and other Chymical Operations. But there is yet another manner of preparing it with more ſubtilty for inward uſes, to apply it as a Remedy; which is thus performed.

℞ Of the fineſt Salt-peter you can find, and very dry; reduce ℔ ij thereof in Pouder in a warm Mortar, in a very dry and fair day; pound alſo ℔ vj of Pots made with ordinary Clay, onely wrought and dryed before they be baked; mingle theſe two ſubſtances exactly together, and pour them in a capacious Glaſs Retort, with a very broad or wide neck, and chiefly from that ſide which is towards the belly of the Retort; let it be luted with a very good ſticking Lute, abiding in the fire, and not eaſily falling off, neither cracking; fit to the neck thereof a very large Recipient, and lute or cloſe the Veſſels together only with a wet Bladder; begin the fire very ſlowly at firſt, and thus go on encreaſing by degrees, until all the Phlegm be come over, and the Recipient begins to grow red; then empty the Recipient, or ſubſtitute another like unto it very dry and clean, which lute with the ſame Earth wherewith the Retort was luted; then encreaſe the fire, and keep it ſtill higher, ſo as you perceive that the falling drops ſhall be of a red or yellow colour, or that the Recipient begins to loſe ſomething of its high red colour, even during the great height of the fire; for this is a true ſign of the end of the Operation, and do not expect till the colour begins to grow clearer, for this would never happen by reaſon of the red Vapours which this Spirit continually ſends forth. But the Artiſt muſt be preadmoniſhed to take heed, when he comes to unlute the Veſſels and pour out this red Spirit, for it is ſo vaporous, ſubtil and volatile, that it would endanger and ſuffocate him, or it may be, cauſe him to loſe all by breaking his Veſſels: wherefore let him ſtand above the Wind and ſtop his Noſe, not opening the Mouth, and taking very great heed in the pouring out of it; and to this end let him have both his Bottle and Funnel in great readineſs, that he may meet with no ſtop. The Viol wherein this Spirit is put, muſt be very exactly cloſed with an earthen ſtopple, very cloſely joyning on all ſides that nothing may evaporate: This Spirit is endowed with many admirable Faculties, both for Phyſick and Metallick; but conſidering it is ſo ſubtil and ſo volatile, that it cannot almoſt be preſerved, much leſs tranſported or ſent upon occaſion abroad; there is a way found to mix and circulate it, as followeth, for better preſervation.

The Circulated Spirit of Niter for Phyſick.

℞ ℥ vj of the red Spirit of Niter, ℥ xij of Balm-Water, ℥ ij of Spirit of Lilly-Convally-Flowers; put them together in a capacious Pellican, or two joyned Matraſſes with a long neck; and place them in a vaporous Balneo in Oat-ſtraw, and digeſt them in the temperate and gentle heat the ſpace of ſeven continual dayes: then put this circulated and united Spirit to the other, and to the Water in a ſtrong Viol very well ſtopt, as we have ſaid of the Spirit. It is an admirable Remedy, both againſt Apoplexy and Epilepſie, againſt Cholick, and generally againſt all Obſtructions; It is alſo very good againſt Agues and Plague. The Doſis is from ℈ j to ʒ j, and ʒ j ß in Wine, Broth, ſome decoction or diſtilled Water appropriated to the Diſeaſe.

Now as the *Aqua Fortis* and Regal Water take only their diſſolving faculty properly from Niter, though for the moſt part other Salts be mingled with it, ſuch as are Allom, common Salt, *Sal Gem*, Vitriol, and Salt Armoniack; therefore will we give a deſcription of them here, as we did promiſe before.

How the good Aqua Fortis *is to be prepared.*

THE name of *Aqua Fortis* hath been given to the Spirit extracted from Niter and Vitriol, becauſe it hath the ſtrength and faculty to diſſolve all kinds of Metals, Gold excepted, whom it cannot touch or work upon unleſs it be Regalized; that is to ſay, made capable of diſſolving Gold, which is the King of Metals; for which cauſe the name of *Regal*, or *Regal Water*, hath been given to this other Diſſolvent. *Aqua Fortis is made thus:*

Equal parts of Salt-peter of the ſecond Chryſtallization, and Vitriol only deſiccated, to which add half their weight of Brick-duſt very dry; and put theſe in a good earthen Retort well luted, fitting to it a Recipient, and make your Operation and Diſtillation with the ſame care and precaution as we preſcribe before in diſtilling the Spirit of Salt. Drive the fire the ſpace of 24 hours, making it the laſt eight hours of a very quick flame, that the laſt Spirits may be very well drawn off from the Center of their own Earth, wherein they be ſtrictly entangled. Then there remains a Salt of middle nature in the *Caput Mortuum*, (as it is called) which is of very great vertue, by reaſon of the mixture and action and re-action of the Vitriol and Niter one upon the other, whereof a very good Remedy may be prepared in the manner following.

The Vitriolated Niter, otherwiſe the Arcanum of Niter and double Panacea.

PUT the *Caput Mortuum* of your *Aqua Fortis* to digeſt in boyling diſtilled Rain-Water, and ſtir it often, the better to extract the Salt; filtrate the Diſſolution, and ſlowly evaporate it in Aſhes in an earthen Pan or glaſs Veſſel; and when you ſhall perceive a ſmall skin gathering on the top of the Liquor, put it to chryſtallize; then continue to evaporate until you have extracted all the Salt, which you muſt ſo often diſſolve, filtrate, evaporate and chryſtallize, that it appears clear, pure and bright. Then ℞ ij p. and ß of this Salt, and p. ß of Mineral Chryſtal, prepared as we have taught; put them together in a well luted Cucurbit, being firſt triturated into very ſubtil Pouder; calcine them together in open fire in this Cucurbit, giving it a gradual fire until they be together in faſhion; the Veſſel being cooled, draw out the matter, and grind it once more with an eighth part of Mineral Chryſtal, and begin again the Calcination and Fuſion in a new luted Cucurbit. After this ſecond Calcination, diſſolve that which did remain in the diſtilled Rain-Water, and filtrate the diſſolution; then evaporate in the vapour of *B. M.* to a dry bottom: this Salt being ſo dryed, grind upon a Porphyry Stone into Alkohol, with an eighth part of Calx of Gold well opened, and mix them, as it were, indiviſibly together by trituration; then put this mixture in a new luted Cucurbit, and calcine it in a very well graduate fire till it hath attained to a fluxion; which done, ceaſe the fire and let the Veſſel cool; and out of it take that *Grand Remedy*, whereof abundance of Experiments have been tryed againſt Diſeaſes of Melancholy, and all kind of Agues and Feaveriſh Diſtempers, both continual and intermittent; alſo againſt Gravel and Scurvy; and finally, againſt all Obſtructions. The Doſis muſt be from ℈ ß, to ℈ ij, in ſome Confection, Conſerve, or appropriated Liquor. The Vertues of this Salt, and its manner of operating, cannot ſufficiently be praiſed; for it ſweetly provokes ſleep, and ſettles the *Archeus* of the Ventricle in its ordinary ſtate and calmneſs when it is out of order. Briefly, there is a certain hidden Myſtery in it, whereof it is very difficult to render any reaſon, unleſs we conceive that this Salt muſt have received the eradiations of the Anodyne Sulphur of Vitriol, by the great expreſſion of the fire, or ſufficiently opened the Gold, to make him yeeld and communicate his ſalutiferous influences; but we rather give credit to the firſt then the laſt Conjecture.

How the Aqua Fortis *is to be regaliz'd or made Regal.*

ARTISTS uſe to Regalize their *Aqua Fortis* with decrepitated Salt, or Salt Armoniack. Some diſſolve either of it only without more ado in the *Aqua Fortis*, viz. j p. Salt, and iv p. of *Aqua Fortis*. Others mix ij p. of Niter, and j p. of Armoniack Salt, with iij p. of the *Caput Mortuum* of the *Aqua Fortis*, and diſtil it *S.A.* Others do make *Gradatory Waters*, as they call them, with Sublimate, Arſenick, Orpiment, Brimſtone, Cinnabar, *æs uſtum*, Spaniſh-green, and many other Ingredients; but as all theſe are not for Phyſical Uſes, and that moreover, the ill ſmell proceeding from theſe Operations, doth kill and hebetate the Brain, and cauſes evil accidents and ſhakings of the Limbs, we ſhall afford no deſcription thereof here, ſince they make nothing to our purpoſe, which is to preſerve and reſtore health, not to impair or deſtroy it. But as we have occaſion of a good Regal Water, pure and well prepared to reduce Gold in a ſubtil and well opened Calx, the Son of Art ſhall thus prepare it.

How the true Regal Water is to be prepared.

℞ ℥ v of red Spirit of Niter, and ℥ iv of *Sal Gem* in Pouder; put the *Sal Gem* in a pretty capacious Retort, and pour upon it the Spirit of Niter, mixing them well together; place the Retort in Sand, and fit to it a very capacious Recipient; which lute without much circumſpection, provided the neck of the Retort be large, and ſtrikes half a foot into the body of the Recipient; give fire to it by degrees, and encreaſe it by little and little till the *Sal Gem* be altogether dryed, and that neither drops nor vapours will come forth any more from it. Pour this true Regal Water into a good Lorrain Glaſs Bottle, double and well backed, ſtopping it with a glaſs ſtopple made very fit to the neck of the Bottle, by working and turning it within with Pouder of Emerod and Oil, otherwiſe this Water would fly and vapour away; which makes me counſel the Sons of Art, not to prepare it till they be ready to uſe it in their Operations: This is the Diſſolvent wherewith they ſhall be capable to prepare Gold in the right manner, to reduce it into a Calx capable to anſwer their expectation, in ſuch Preparations as they ſhall deſign with it, or to ſatisfie their curioſity in diſcovering the ſphere of Activity of this noble Art, or to extract ſuch Remedies as may be uſeful for the relief of afflicted Patients.

Of Allom, and its Chymical Preparation.

WEE underſtand nothing elſe by Allom, but a ſaline ſubſtance diſſoluble in Water, though many other things bear improperly this name, which rather participate of the nature of Calk by their incombuſtibility, then of Allom, whereof we intend to treat, as of a fit Subject for this Section, where we only handle Salts. That Allom whereof we intend to give the manner of Preparation, is that which in Pharmacy is called *Alumen Rupeum*, or Roach Allom; and being nothing elſe but the ſalt ſubſtance of a Mineral Earth, participating of the nature of Lead or *Saturn*, having in it ſelf an acid Spirit, and a harſh cauſtick Salt. Our Allom is made three ſeveral wayes; for ſome of it is firſt found ready prepared by Nature, and condenſated of it ſelf in the veins of alluminous Earths. Secondly, It is made by the evaporation of mineral aluminous Waters. And thirdly, It is alſo drawn by the diſſolution of Earths, Stones, or other Minerals abounding with aluminous Salt. The general Vertues of this Salt are to deſiccate, aſtringe, thicken or incraſſate; there is not much uſe of it inwardly without preparation, though by ſome it is given againſt Agues; but it is much uſed in Gargariſm's, which are appointed for diſeaſes and pains in the Throat, and chiefly in the ſwelling and inflammation of the Almonds, and falling, ſwelling or inflammation alſo of the *Uvula*; it is alſo good againſt Quinſy, rottenneſs and putrefaction of the Gums, proceeding either from a Scorbutical Venom or Tincture, as alſo of Venereous Infection; It is alſo a good Reſolutive, taking away ſwelling and œdematous Tumours of the Feet, being mixt in a Bath which is called a *Lavepieds* or *Feet-waſher*, becauſe it reſolves and allayes the inflammation and heat of Spirits attracted and irritated in theſe lower parts, either by toyl and wearineſs, or indiſpoſition of Body.

The Preparations commonly made upon Allom, are, *Purification* or *Chryſtallization*, *Calcination* or *Uſtion*, *Diſtillation* and *Extraction*, or *Subtiliation*; of each of which Operations we will give ſome Examples, that the Artiſt may be fully inſtructed both of the Work and Vertue of the Remedies reſulting from the ſame.

Purification of Allom.

THE Purification of Allom, is not made upon the bare intention of ſeparating the impurities and earthlineſs of it; but the Son of Art muſt have a more excellent proſpect and end in it, which is the correcting of its harſh, auſtere and unpleaſant taſte: to attain to this, diſſolve as much Roach-Allom as you pleaſe in diſtilled Rain-Water, heated before in a glazed earthen Pan, for Allom muſt not be put in any metallick Veſſel, becauſe it immediately works upon it, and by its acid and penetrating Spirit, draws the Taſte and Tincture thereof. The Allom being diſſolved, filtrate it, and evaporate afterwards the ſuperfluous moiſture in a ſlow heat, like unto that of the boyling vaporous Balneo, until it contracts a skin; then put the Veſſel in a cool place to cauſe the Chryſtals to ſhute, and go on in evaporating and chryſtallizing, until no more Chryſtals will come; this work reiterate four times, and ſo ſhall you have a ſubtil and pleaſant Allom, if compared to common, which you may adminiſter both inwardly and outwardly with much more ſucceſs, ſafety and delight.

The

The Calcination or Uſtion of Allom.

IT would not be worth while to ſpeak of this Operation, by reaſon of its eaſineſs, unleſs we had ſome notes and reflections to make upon; for there is none but is capable to put a piece of Allom upon an Iron Plate, and to give fire under it until the Phlegm and Spirit be evaporated away, and that this piece which was ſmooth, heavy, clear and compacted, is become light, opacous, ſpongious and white. And now ſince the Artiſt hath need of the Phlegm and Spirit of Allom, and that the ſubſtance remaining, after they are extracted by diſtillation, hath the ſame vertue with that which remains upon the Iron Plate; it will be much more convenient to diſtil firſt the ſame in order to Calcination, whereby to preſerve the Phlegm and Spirit, which otherwiſe are waſted without any advantage. Burnt Allom is very good to conſume by degrees and without pain, the moiſt and ſpongious fleſh and excreſcencies of the Lips of Wounds and Ulcers; it is good alſo to hinder corruption, becauſe it deſiccates and reſolves their ſuperfluities. The fixed Salt of Allom is alſo drawn from it, as we ſhall ſay after we have ſpoken of the Diſtillation thereof in order to calcine it.

The Diſtillation of Allom.

℞ As much Allom as you will; and put it in ſmall pieces in a capacious Glaſs Retort, filled with it to a third part; place it in Sand, and adaptate to the neck of it a large Recipient; give it fire by degrees to draw the Phlegm thereof with a well and duly graduated fire; and when the white vapours ſhall begin to come forth out of the neck of the Retort, change the Recipient, and encreaſe the fire by degrees until all the Spirit be come forth, and you ſhall find your calcinated Allom in the bottom of the Retort. But this Spirit being unpleaſant & of an ill taſte, hath need of being rectified, corrected and ſweetned, which is performed with the Spirit of Wine, with which it muſt be rectified three or four times; ſo it becomes ſweet and pleaſant, and an excellent Remedy to mingle in the ordinary Drink of Febricitants, becauſe its little ſharpneſs and quickneſs doth cool and temper their predominant heat, and allayes their thirſt. But if it be good inwardly applyed, it is no leſs ſucceſsful outwardly; for it cleanſes and heals wonderful well all Ulcers in the Mouth, and particularly thoſe ſmall Ulcers called *Aphthæ*, or *the ſore Mouth of Sucking Children.* The Doſis muſt be from iv drops to x, in Wine or ſome convenient Decoction. The Phlegm of Allom is good to temper the inflammation of the Eyes, as alſo that of Phlegmons or Eteſypela's; it is alſo very uſeful to waſh and foment Wounds, Ulcers and Burnings.

How Allom may be turned into a Liquid Magiſtery.

℞ As much purified and chryſtallized Allom as you will, put it in a Glaſs Cucurbit, and ſprinkle it with diſtilled Rain-Water, and put the Veſſel in a cold place, until all the Allom be reſolved into Liquor; which filtrate and diſtil in Aſhes to a dry bottom; ſprinkle again the remaining Allom with diſtilled Liquor, and let it diſſolve again, and ſo diſtil to a dry bottom as before, going on thus ſprinkling, reſolving and diſtilling, until the body of the Allom be all converted into Liquor, and come through the noſe of the Limbeck, which is that we call *the liquid Magiſtery of Allom*, or to ſpeak more properly, *his true aſtringent Spirit*; for this Remedy is one of the nobleſt and ſureſt Stipticks and Aſtringents to be found amongſt all Phyſical Preparations, not inferior to Martial Remedies, Bolus or any other, whether for inward or outward application, as experience will make evident. The Doſis inward, is from iv drops to xij, in immoderate Fluxes, Gonorrheas or heat of Urine, the Venereous ſtain being firſt taken off by ſome excellent Purge appropriated to the Perſon or the Diſeaſe. It may be mixt, with hopes of a ſpeedy and haſty ſucceſs, in *Epuloticał* Waters, for nothing advances better Cicatrization and re-union of the ſeveral ſolutions of continuity.

How Sugar of Allom is to be prepared.

PUT ℔ ij or iij of Allom in a good Glaſs Retort; which place in Sand to draw off ſoftly the Phlegm of it in a well graduated heat; as ſoon as this is done, remove the fire, and the Retort being cold, cohobate the Phlegm upon the deſiccated Allom, and digeſt them together in a ſimple heat of a vaporous Balneo the ſpace of 24 hours: this done, put the Retort again in Sand, draw off the Phlegm from it, and thus ſeven times conſecutively reiterate the cohobation, digeſtion and extraction of Phlegm; which being performed, put that which after the ſeventh ſeparation of the Phlegm remains in the bottom of the Cucurbit, in a Cellar, or ſome other cool place to diſſolve it into Liquor; the Diſſolution ended, filtrate it cleanly, and put it to digeſt in a double or circulatory Veſſel, in Aſhes in a ſlow heat, the ſpace of twelve natural dayes; after which, having placed it in a Cucurbit in Aſhes, you muſt diſtil off all the moiſture to a dry bottom, and there ſhall remain the Sugar of Allom, which is a particular Remedy againſt Diſeaſes of the Breaſt, allaying alſo Toothach, applyed upon the Gums. Above all, it is of ſingular uſe for thoſe whoſe Breaſt is infected with any metallick, mineral, arſenical, mercurial Vapours, or the like. The Doſis muſt be from v *gr.* to xv, in Broths, or ſome Pectoral or Diuretical Decoctions. It ſerves alſo to allay thirſt in Feavers, and is of ſingular comfort to them that feel heats and periodical pains about the Region of the *Sternum*, or the upper part of the Breaſt, by reaſon of malignant, ſharp and biting ſeroſities, which the Venereous Infection ſends ordinarily in theſe parts, to ſuch as have long had the ſtain upon themſelves; it works by Urine, Spitting, Sweats, and an inſenſible and natural tranſpiration.

The Salification of Allom.

TO obtain the fixed part of Allom, ℞ ℔ j or ij of the *Caput Mortuum* of the diſtillation of the Spirit of Allom, and put it in a Cucurbit; then pour upon it diſtilled Rain-Water ſix fingers high, digeſt it in Aſhes in a moderate heat, which muſt be encreaſed by degrees, till the Liquor begins almoſt to boyl; ſtir it from time to time with a Wooden Slice; then filtrate, and evaporate the filtration in the vapour of a boyling Balneo, in a gray or white earthen Diſh till the skin begins to cover it; then let it ſtand in a cool place, and there ſhute into Chryſtals, or evaporate it to a dry bottom, ſtirring continually till it be quite dry. This Salt is much more active then Burnt-Allom, becauſe it is ſeparated from its Earth, and for this reaſon may be applyed in much leſs quantity to the ſame uſes. It may be alſo internally given to thoſe that have a Stomach ſtuft with ſlime or other foulneſs, which deads and duls the appetite: for it will cut them, attenuate and expel, either by Stool or Vomiting. The Doſis muſt be from grain vj to xij or xv, in Broth or Decoction of Wild-Endive, or Spaniſh *Schorzonera* Roots.

Extraction of Allom.

℞ ℔ vj of very pure and clean Allom, without any previous Preparation; bake it in an earthen unglazed Pot in a very moderate heat, until all the Phlegm be vapoured away; then encreaſe the fire by degrees, ſo as both the Pot and Allom in it may grow red glowing hot on all ſides; which done, have in readineſs in a great earthen Pan, ℔ iv of diſtilled Vinegar, wherein you ſhall throw this calcined Allom glowing red, and the Vinegar will draw immediately, and take to himſelf the Eſſence and Magiſtery of Allom, and the remainder of the body will precipitate it ſelf in the bottom of the Pan into a white Pouder, which after ſeparation, muſt be waſhed to a ſweetneſs, or edulcorated, then dryed, and ſo kept for uſe. But the remaining Vinegar impregnated with the Vertues of the Allom, muſt be filtrated; and having joyned to it ℥ ß of Tincture of Elder-Berries made with its own fermented Spirit; put all together in a Cucurbit in *B. M.* and draw by diſtillation all the ſuperfluous Liquor to a conſiſtency of boyled Honey or Syrup; then place your Cucurbit in a very cool place, and there letting it reſt four or five dayes, you ſhall find by this time Chryſtals framed in this Liquor, which ſeparate and dry, and proceed in the evaporation and chryſtailization until no more Chryſtals will ſhute. Theſe Chryſtals are Sudorificks, Diureticks and Stomachical, and therefore a good Remedy againſt the Scurvy; they may be adminiſtred twice in the week, in decoction of Nettle-Roots, or Juyce of Chervil well depurated and mixt with a little White-Wine; it may alſo be given three times to thoſe that are moleſted with Tertian Agues a little before their fit in the ſame Liquors. The Doſis is from vj *gr.* to ℈ j.

Of Armoniack Salt, and its Chymical Preparation.

There is mention made, in ancient Writers, of a natural Armoniack Salt, which was wont to be found in the *Lybian Sand*, there formed and ſublimated, as they ſay, by the mixture of the ſtale of Camels uſed in their *Caravanes*, and making for the moſt part their Stations and Baitings in places appointed for that purpoſe. But we have none of it for the preſent, and know none other but that which is artificial and compounded of Common Salt, and *Sal Gem*, Salt of Soot and of Urine. This Salt hath a harſh taſte, mixt with an acid bitterneſs very ſubtil and biting. Chymiſts do call it, *the Solar Salt, the White Eagle, the White*

Mercurial Rain, and the Philoſophers *Mercurial Salt*. That which is pureſt, is to be preferred in choice, as alſo the cleareſt and whiteſt. That which comes from *Venice* is the beſt, and the ſecond in order of goodneſs is that of *Antwerp*, the courſeſt and worſt is that which comes from *Holland*. The general Vertues of it are to provoke Sweat and Urine, and to work alſo by inſenſible tranſpiration; it is of very great efficacy againſt all Aguiſh Diſtempers, and chiefly againſt Quartans; it reſiſts Corruption and Putrefaction. The Doſis is from iv *gr.* to ℈j. It is uſed alſo outwardly againſt Gangrenes, and to conſume the ſuperfluous and corrupted fleſh. It is alſo very good uſed in Gargals againſt the Quinſy; and moreover, it is mixt in Waters for ſore Eyes.

Moreover, the Artiſt muſt note, that Armoniack Salt is one of the moſt powerful Agents amongſt all Chymical Operations, for extracting the Sulphurs of Metals and Minerals by the help of Sublimation: wherefore it is not without very good reaſon, that the greateſt part of the moſt famous Writers in our Art, have diſguiſed it with ſeveral ænigmatical and figurative Appellations.

The Preparations of Salt Armoniack, are *Purification* or *Chryſtallization*, *Sublimation*, *Calcination*, *Diſtillation* and *Liquation*. We will treat in the ſequel of this Diſcourſe, of all theſe Operations in particular, and will give Examples both of the Remedies, and the manner of Working, that the Sons of Art may be ſo well inſtructed by it, as not to be ſurprized with the ſeveral changes that uſe to happen by the mixture of this Salt, with ſundry different matters upon which it operates with ſo much efficacy, that it raviſhes with wonder even the moſt knowing in thoſe myſteries, which it opens, and draws from the Boſom and Center of natural Beings: and chiefly, becauſe this Salt is compounded of ſeveral parts which are united amongſt themſelves, and produce a Salt quite different from all other Salts, and which conſequently operates in a very different way, as it will evidently appear to thoſe that ſhall put it in practice.

The Purification and Chryſtallization of Armoniack Salt.

THis Purification is not made otherwiſe then by diſſolving it with diſtilled Rain-Water in a ſlow heat; after which filtrate and evaporate in the ſame heat; then put it in a cool place to ſhute it Chryſtals; and thus continue until you have extracted all your Armoniack Salt fair, pure and clear. This Salt hath not any greater efficacy then common Armoniack in Cakes, though it be ſomething purer: wherefore we will not attribute alſo more vertue, nor preſcribe any other Doſis.

The Sublimation of Flowers of Salt Armoniack.

℞ As much melted Salt as Armoniack, and mix them exactly together; then pour this mixture into a Matraſs or Cucurbit, and ſublime it in Aſhes, reiterating this Sublimation four times, to purifie, ſubtiliate and volatilize the better the Armoniack; ſome will have a like proportion of filings of Steel mixt with the Armoniack that they may ſublime together; but they are deceived, for when the Armoniack Salt is mixt with *Mars*, it preſently works upon, and the Salt corrodes all the Steel, whereof there may be made afterwards a very good Vitriol: But as the intention of thoſe that add Steel to this Sublimation, is only to make the Flowers of this Salt more inciſive, aperitive, more ſplenetical and hepatical; our advice is to the Sons of Art, to mix a fourth part of this opacous and greeniſh or blewiſh Vitrification, which is found in Iron Works or Furnaces, where the firſt fuſion of the Mine is made, or as much of thoſe Scales which fall from Smiths Anvils: But let him note, that neither of theſe two ſubſtances muſt be made in ſubtil Pouder; contrariwiſe, it will ſuffice to have it courſly beaten, that the Armoniack may only lick it over in the action of ſubliming, and ſo draw only the ſoul, or a portion of the internal Sulphur of it, by which it is much encreaſed in excellency and vertue: The Artiſt muſt conſider, that as theſe Flowers are more ſubtil and penetrating then Armoniack Salt meerly purified and chryſtallized; ſo muſt it conſequently be endowed with much more vertue, and particularly when this Salt is made uſe of againſt Quartan and other intermittent Agues. Theſe Flowers are alſo of ſingular uſe to correct the crudities of the Ventricle, and remove ill fermentations, if every morning the Patient takes of it faſting in a Glaſs of Wormwood Wine, or in infuſion of Saſſafras Wood, made in White-Wine: But the uſe of it muſt be continued the ſpace of fifteen dayes, or three whole weeks. And if this Remedy be given againſt Leucophlegmacy, or the beginning of any kind of Dropſie, which ordinarily follows after long Diſeaſes, and the various agitations of dangerous Feavers; you muſt take care that the Patient be in his Bed when the Remedy ſhall be adminiſtred unto him, and that he be well covered to help the provocation of Sweat; and at his coming out of it, let him take ſome nouriſhment of eaſie digeſtion, and above

above all, be carefully rubbed and dryed, by reaſon of the ill impreſſions which theſe ſweats do communicate to the linnen wherein the Patient is wrapt, and might eaſily raiſe ſome malignity upon a skin which is yet open, and doth exhale ſome noxious Vapours, and capable yet to do hurt. The Doſis of theſe Flowers, is from iij *gr.* to xv, and if the ſtrength of the Patient can bear it, even to xx, chiefly if he hath been uſed to it before, encreaſing the quantity by little and little.

The Calcination or Fixation of Salt Armoniack.

WEE have ever had a care ſufficiently to inform our Artiſt, that he muſt loſe nothing, of what the ſubſtances whereupon he works may afford, that is good and uſeful in themſelves. For which reaſon we cannot admit, that he ſhould fix or barely calcine the Armoniack Salt in an earthen Pot, in a circular fire and a Wind-Furnace, becauſe he loſes by this way all the volatile urinous Spirit which is contained in this Myſterious Salt. Wherefore we preſcribe the operation of it to be made in that kind of open Retort, which *Glauber* doth deſcribe in the ſecond part of his Philoſophical Furnaces; for by this means, what flies otherwiſe unneceſſarily away into the Air, is preſerved: you muſt then proceed in it in the manner following.

℞ j p. of Quick-Lime well choſen, and that hath not been expoſed to the Air, and j p. ß of Armoniack Salt; reduce them each ſeverally to Pouder, then mix together, and incorporate to a Pap with new made Urine: but before you begin this mixture, kindle the fire under your Retort, and make it ſo red, that the Lead which is in the hollow Channel, and is intended to be a Lute to the Cover, be melted: things being thus diſpoſed, put a ſmall ſpoonful of this matter at once in a Retort, and cover it immediately with its Cover, and the Vapours will inſtantly run into the Recipient, which muſt be fitted to the neck of it, and the ſame exactly luted. Go on in this manner until all the matter be conſumed, or until you have enough of volatile Spirit, if your intention be to extract it, or until you have ſufficient quantity of Armoniack Salt fixt or calcined, if your intention leads no further. Then draw the Spirit out of the Recipient, and rectifie it; and of this we ſhall ſpeak again hereafter in the diſtillation of Armoniack Salt; but draw the lump remaining in the Retort, whilſt the fire is yet in its ſtrength, for then it is ſoft, and may be taken up eaſily with a ſmall Iron Ladle, having a handle ſomewhat long.

Diſſolve and digeſt the ſame matter in Rain-Water; then filtrate the Liquor, and ſo proceed on till no more Salt will come from it; then evaporate all the filtrated Liquors to a dry bottom, ſtirring them continually towards the end until all the moiſture be gone; you may keep ſome part of this Salt wholly dry in a Viol exactly ſtopt, and put the other in a Cellar to diſſolve in Liquor, which will be fit for extracting ſeveral Tinctures, as the Salt may ſerve for Cementations. We ſay nothing concerning the Doſis of this fixed Salt, becauſe it is never inwardly uſed in Diſeaſes. The diſſolved Liquor may neverthеleſs be uſed externally to mollifie and reſolve Corns and Callous, or hard Excreſcences growing in the feet, and often very troubleſom: it may be alſo uſed with a little Spirit of Wine to rub and chafe the hard and knotty places of the Gout, to reſolve, ſoften and attenuate the hardneſs of that tartarous and ſticking matter contained in thoſe Nodoſities.

The Diſtillation of Armoniack Salt.

MAny Authors have equivocated upon the diſtillation of this admirable Salt; for ſome would have the volatile Spirit to be the principal part of this myſterious Compound. Others thought the acid Spirit only could yeeld what the antient Philoſophers did ſearch in it: We muſt confeſs both Parties to have many reaſons on which they ſeem to be grounded; but they have not yet well decided the Queſtion, becauſe thoſe that did endeavour to clear it moſt, have not took well enough into their conſideration the double nature of Armoniack Salt, which is compounded of Common Salt that is acid, and as it were fixt, and of the volatile Salt of Urine: Now the union and mixture of theſe two Salts is ſo ſtrict, that it is very difficult, yea almoſt impoſſible to turn them over the Helm into Liquor one with the other: but contrariwiſe, the urinous and volatile Salt carries away the body of the acid, which produces no more then the ſublimation of the ſame Salt. But they that have attempted to poſſeſs them both together, could never attain to it with ſucceſs, but by the addition of ſome other body, which had the faculty to keep back the acid Salt, to let the urinous Spirit and volatile Salt of Urine aſcend, that are both but one and the ſame thing, as it appears by the ſublimation of the ſame Spirit into a body of volatile Salt. It would neverthеleſs be an excellent Remedy, if Art could have attained to raiſe this Armoniack Salt to a Spirit, equally partaker of the vertues of the Volatile and of the common Salt without any forraign or ſtrange mixture; becauſe that as the action of theſe two Salts one upon the other hath produced a Salt quite differing in taſte, ſmell and vertue from the two taken aſunder; ſo ſhould we have a ſubtil and penetrative Spirit, which would be capable of many rare effects in Phyſick, and uſeful for the Preparation of many other noble Remedies, if once Armoniack Salt could be made to aſcend into a Spirit endowed with the vertues which do conſtitute it. But as many have attempted this Operation without ſucceſs, ſo do I find my ſelf forced to acknowledge here my ignorance, and ſay, That we muſt be contented with the Flowers of Salt Armoniack, until ſome more skilful Artiſt hath improved our Knowledge and Experience, or our own Induſtry and Labour diſcovered more unto us, to impart it afterwards to the Common-wealth of *Hermetical Phyſick.* We will nevertheleſs deliver two wayes of drawing the Spirit of Armoniack, and its volatile urinous Salt; the firſt ſhall only teach how to draw the Spirit alone, and the urinous Salt only; but the ſecond ſhall teach the ſeparation of its acid Spirit, which poſſeſſes much more of vertue then the Spirit of common Salt, by reaſon of the mixture and working of the volatile Salt of Urine, which hath blunted and killed part of its corroſive Faculty.

To make the Spirit and Volatile Urinous Salt of Armoniack.

℞ ℔ j of well choſen Armoniack Salt, and as much of well purified Tartar very dry; beat the Armoniack to Pouder in a warm Mortar, and then add to it the Salt of Tartar exactly mixed; this mixtue put in a glaſs Retort with a wide neck, and placing it in Sand, fit to it a large Recipient, and give it a gradual fire, and in a ſhort time you ſhall have a volatile Spirit coming over the Helm in Liquor: the Salt will ſublimate it ſelf into a clear ſubſtance as white as Camphire; and this Operation may be ended in three, four, or five hours at the moſt. The volatile Salt may be diſſolved with its own Spirit, and they both kept together for ſuch uſes as we have ſaid the Spirit and volatile Salt of Urine to be good, it being one and the ſame thing; this more onely we have to add, becauſe it is a thing of the higheſt concern, That as this volatile Salt and Spirit do more then any thing elſe correct and hinder putrefaction and corruption, and that the poyſon or venom of the Plague, and all Analogous Diſeaſes unto it, is corruptive and putrifying, killing by his evil fermentation the natural Spirits; ſo muſt Phyſitians have a care to uſe this admirable Remedy, as much to preſerve bodies from that fearful ſcourge and malady, as to hinder the progreſs of it when it hath already begun to rage and ſpread its infection. We will likewiſe ſay, that this volatile Salt and Spirit are more ſubtil and penetrating, and of a kinder taſte and ſmell then thoſe that have been extracted out of plain Urine, becauſe they were not fermented & depurated by common Salt: wherefore we do particularly recommend them, to preſerve the Stomach from that putrefaction and corruption which is generated by the vice and defect of the digeſtive faculty; as alſo to deſtroy and quench all evil acid fermentations in the Ventricle: it is likewiſe good in fits of the Mother, againſt Epilepſie and Apoplexy, inveterate diſeaſes of the Head; and it will produce ſurprizing and wonderful effects.

How the Spirit of Armoniack Salt is to be extracted.

THough we have already ſhewed how the Son of Art may extract the Spirit and volatile Salt of this Mixt, yet we cannot ſhew how the acid Spirit of this Mixt is to be extracted, without ſeparating from it at the ſame time the volatile Spirit thereof. And as we have already declared the manner of that Operation before, when we ſpake of the fixation of Armoniack, we will not inſiſt upon a needleſs repetition of what we have once already ſaid: only we will add, That you muſt put here equal parts of good Quick-Lime, and Armoniack Salt, and reduce them to a Pap with Urine; then diſtil it in a glowing hot Iron Retort, and proceed as we have ſaid above in the quoted place. The Artiſt muſt put all the Liquor he ſhall find in his Recipient, after diſtillation, in a Cucurbit of a Cubit high, and narrow in the neck, placing it in *B. M.* and covering it with a Limbeck-head exactly luted, as alſo with the Recipient which muſt be added unto it; then give it a graduate fire, that all the volatile Spirit, and volatile urinous Salt may ſeparate it ſelf and riſe with the heat; and when no more will aſcend, put the remaining Liquor in a Retort, and rectifie it in Sand, and you ſhall have an acid Spirit much pleaſanter then the Spirit of common Salt, and endowed with the ſame vertue; wherefore we refer our Reader to what we have ſaid above: the Sons of Art muſt only note, That this Spirit, in reſpect of that of common Salt, may be compared to a perfect Man, and that which proceeds from common Salt can onely be reſembled to a Youth; from whence we may draw thoſe conſequences which we onely intend to inſinuate unto him by this Compariſon. The Spirit and volatile Salt drawn by this Proceſs, is endowed with the ſame Vertues as we have related before.

The Liquation of Salt Armoniack.

THis Operation is not very myſterious, being nothing elſe but the reſolution of Armoniack Salt fixed by Quick-Lime into Liquor in the cool of a Cellar; or it is alſo the reſolution of the ſame Armoniack Salt purified, chryſtallized and reduced to Pouder: put in Whites of Eggs newly boyled to a hardneſs, and ſet it in order in an earthen Pan in a Cellar to extract the Liquor, which Artiſts do call *Water of Armoniack Salt:* Theſe two Liquors made by Reſolution, are not for Phyſical uſes, unleſs they be uſed in Metallick Preparations and Minerals, which they either fix or open according to the purpoſe and intention of the Workman.

Of Vitriol, and its Chymical Preparation.

WEE have demonſtrated, in the beginning of the Chapter of Metals, the firſt and immediate principles of Vitriol; wherefore we refer thereunto our Artiſt, to ſpeak only here of Vitriol reduced into a body either by Art or by Nature; for ſome Vitriol is found ready prepared and chryſtallized in the Earth of Mines where Metals do abound; as ſome is to be ſeen, which curious ſearchers of Nature have brought from the *Indies*, *Hungary*, *Germany*, *Italy*, and ſeveral other parts of *Europe*: But there is alſo an Artificial Vitriol, which is extracted from Vitriolick Marcaſſites, commonly found in fat Grounds, alwayes about the places abounding with pregnant metallick Seeds, and enclined naturally to the Generation of Sulphur. They that ſhall be led by a Philoſophical curioſity to inſtruct themſelves further in this matter, muſt ſeek in places where the fat Clay for making Tyles and Bricks is extracted, and there may find ſome of theſe vitriolick Marcaſſites, which are nothing elſe but what the *Greeks* call ϖυρίθης, and we *Fire-locks*, *Flint*, *Thunderbolt*, *Fire-flint*, and the Tile-Bakers *Machafer.* — Having got of theſe Stones, let them examine them by fire, which ſhall diſcover to them nothing but a ſulphureous ſubſtance, by the vapours ſtriking their Noſtrils, and ſeizing upon the Breaſt as burning Brimſtone: But having expoſed the remainder in the Air, it will diſſolve it ſelf into a gray and blackiſh Pouder, which will ſublimate upon its ſuperficies, ſmall, white and ſharp excreſcences melting in the Mouth, and yeelding at firſt a ſweetneſs, which ends in a vitriolick harſhneſs and auſterity; then diſſolve this Pouder in Rain-Water in a ſlow heat; filtrate and evaporate it to a Pellicule or Skin, and let it chryſtallize, and you ſhall have an excellent greeniſh Vitriol. With this ſhort and ſuperficial Antimony, the Artiſt may ſatisfie himſelf, and know in part by the ſevering of this Stone the way by which Nature did proceed in bringing the parts thereof together, and coagulating of it.

The moſt learned Writers which have treated of Vitriol, and beſt known and apprehended the nature thereof, do all unanimouſly confeſs and acknowledge it to be a Mixt of ſo extenſive a vertue, as to be ſufficient to ſupply with Remedies the third part of all Phyſical Practice, and even capable to make up a compleat and well furniſhed Shop. *Baſilius, Valentinus, Bedro, Peracelſus, Sala*, and many others cannot be large and diffuſive enough in its praiſe and commendation; and thoſe Hermetical Philoſophers, which have beſtowed upon it that excellent name of *Vitriolum*, have done it, as they ſay, becauſe the putting together of thoſe Letters contains (allowing a word to each of them) the Myſteries which this Mineral Salt conceals in its Center. *Viſitabis Interiora terræ, Rectificando invenies optimum Lapidem, veram Medicinam.* Theſe words do inſinuate where Vitriol is to be ſought, how prepared, and extol the Remedy which is to be found in it. But Vitriol being ſo well known, we think it needleſs to beſtow more time in ſpeaking of its various Names and Appellations; it will ſuffice to declare the choice, and the general Vertues of it, before we come to the Preparations which Chymiſtry hath found upon this noble and excellent Compound; which properly is nothing elſe but a Mineral Salt near kin to metallick nature, and chiefly to Copper and Iron, or ♀ and ♂, *Venus* and *Mars*. There is three ſeveral kinds of it, which contain many other ſpecies under them. For firſt of all there is the blew Vitriol as blew as a Saphire, in hard, clear, ſolid and dry Chryſtals, called commonly *Cyprus Vitriol*, or *Hungarian*. There is a ſecond kind, greeniſh, of Graſs colour, leſs compact and in leſs Chryſtals, broken into Corns almoſt as common Salt, ſomething unctuous and ſticking to the hand when it is toucht, though it hath but little of moiſture; ſuch is that which is extracted in the *Countrey of Liege*, made about *Spa*, where are acid, ſulphureous and vitriolick Springs; but great care muſt be had not to be ſurprized and deceived by that which is of a blewiſh white, and very ſmall Corns, and wetting the hands of thoſe that touch it, becauſe this is the very worſt of all. The laſt and third kind of Vitriol, is that which is white, and is found in ſmall Cakes at the Drugſters Shops, compacted, hard and dry, which we call in *France, White Copporis*, commonly made uſe of for Vomits and Eye-Waters. Our Artiſt muſt take for the Subject of his Work, of the ſecond kind of Vitriol, if he will extract ſuch Remedies from it, as his hopes do lead him to: for the firſt kind, which holds of Silver or Copper, hath too much of metallick Earth, and very little of acid Spirit. The ſecond, which is blewiſh, is aluminous and terreſtrial, and hath ſcarce any good acidity in it, but only a courſe and excrementitious Earth, which has little or none of metallick Tincture: wherefore let him ſtill generally chuſe of the ſecond for his Operations, unleſs he hath ſome peculiar intention of his own, or that the Author which he follows doth tye him to it, and preſcribe poſitively ſo.

After the choice of Vitriol, we muſt come to the Proprieties and general Vertues thereof, which are to heat, deſiccate, aſtringe or bind, and excite violent Vomiting, conſtipate, open, and kill Worms. As for external Applications, it provokes Sneezing, if put in the Noſtrils, and applyed to the Orifice of the Veſſels open; or to Wounds, doth ſtop the Blood. We have alſo ſpoken more particularly of the Vertues of Vitriol in the Chapter of Metals, when we treated of Copper, whereunto for more ſatisfaction we ſend back our Artiſt.

The general Preparations which Chymiſtry teaches upon Vitriol, are, *Purification, Calcination, Diſtillation, Sublimation, Precipitation, Salification, Extraction*; whereof we will give Examples, that the Artiſt may afterwards be capable to ſeek by himſelf in this noble Mineral, thoſe Vertues and Wonders, which God and Nature, for the help and eaſe of mankind, have concentrated in it.

Of the Purification of Vitriol, and manner of Preparing the Gelly.

WEE have ſo often already made mention of the Purification of Salts, that it will be no difficult matter to lead the Artiſt to underſtand that of Vitriol: It is performed two ſeveral wayes, and upon two ſeveral intentions. The firſt is but a plain diſſolution of Vitriol in Rain-Water, followed with Filtration, Evaporation to a Pellicula or thin Skin and Chryſtallization. The ſecond muſt be done in diſtilled *May-Dew-Water*; but the Diſſolution and Filtration being made, the Artiſt muſt put his Liquor to digeſt in *B. M.* during the ſpace of a Philoſophical Month, and he will find a skin ſeparated by the Liquor on the top of it, and feces precipitated in the bottom, which muſt be yet ſeparated by filtration, and this digeſtion continued until the Vitriol doth caſt forth no more impurity; after which evaporate it ſlowly, and chryſtallize. The firſt chryſtallization or purification, takes only away the ſuperficial and outward foulneſs; but the ſecond ſeparates the very central impurity. The firſt Vitriol may be made uſe of in all common and vulgar Operations, but the ſecond is to be kept for extraordinary Preparations, which are the Tinctures and Arcana's.

The Son of Art ſhall meet alſo in ſeveral Authors with a kind of Preparation they call *Gilla*, which are only fit for Vomits, and are nothing elſe properly, but purified Vitriol ſeparated from their metallick Earth: but as theſe Remedies are for the moſt part violent, and particularly the *Gilla* prepared with blew Vitriol; my advice is to abſtain from them, and to make uſe of the purification of white Vitriol, which is done by diſſolving of it four times in a little Centaury-Water, filtrated, evaporated, and reduced to Chryſtals: for this Water doth not only encreaſe its emetick faculty, but moreover doth ſpecificate it to become an excellent Remedy againſt Feavers. The Doſis may be from x *gr.* to ℈ iv, in Broths, luke-warm Beer, ſome Decoction or convenient Water: It provokes Vomiting very gently, and cleanſes the Stomach from all impurities and foulneſs, checking the Appetite, and cauſing diſguſt of Meat, headach and fluxions: It is good againſt Diſeaſes of the Ventricle, Tertian Agues, and Quotidian Feavers, Worms in the Belly, Plague and growing Epilepſie.

The Calcination of Vitriol.

THE Calcination of Vitriol is performed ſeveral wayes, and for ſeveral intentions. But amongſt the Calcinations of Vitriol, ſome are rather to be called *Exſiccations*, as that which is made by the Reverberation of the Sun-beams in the Canicular Dayes, to prepare that famous and ſo much celebrated Magnetical Remedy, which is called *Sympathetical Pouder*. There is likewiſe an Exſiccation made in the Sun in a Pan, or on the top of an Oven heated every day, to deprive it of its ſuperfluous moiſture, and make it ready afterwards and ſerviceable for diſtilling of *Aqua Fortis*, and for ſeveral other Chymical Preparations. But as the chief ſcope and intention of the Sons of Art is to reduce Vitriol into Cholcotar, and that this intention is fully accompliſhed and attained unto to in the diſtillation of Vitriol, I do not find it neceſſary to loſe, by violent ignition in an open fire, that ſubſtance which flies from it, ſince it hath very good uſes in Phyſick's; wherefore we will not inſiſt to deliver the manner of it, which is too plain to be unknown; but we will ſhow how Vitriol may be calcinated by a noble Philoſophical Calcination, without loſs of any of its eſſential proprieties, provided your Preſcriptions in this particular may be exactly followed.

The Philoſophical Calcination of Vitriol.

℞ Vitriol purified by digeſtion, in the manner as we have declared before; dry it between two Papers in a very ſlow heat, until it turns of it ſelf into a dry Pouder, which muſt be put in one or ſeveral Matraſſes with a flat bottom, the thickneſs of a Shilling or little more, or of the back of a Knife, obſerving well this Preſcription, otherwiſe it might come ſhort of your deſign; heat the Veſſels hermetically, and put them in Aſhes as deep as the matter is high, and about half a finger above; then give it a fire, which muſt not exceed the Suns heat in Summer, and without any interruption continue the ſame during the ſpace of a Philoſophical month, which is forty dayes, and thus the Vitriol will by degrees from a white colour paſs into a yellowiſh, and from yellow to a red, which comes to the height of blood reduced to Pouder; then remove the fire, break the Veſſels, and keep this Philoſophical Vitriol as a rare and excellent Remedy, both inward and outward, poſſeſſing in it ſelf the true ſole and Tincture of this Mixt, which may be extracted with the true Alkohol of Tartarized Wine, if the Artiſt hath the gift of Patience, and takes not the ſhadow for the ſubſtance and body.

The Diſtillation of Vitriol.

WEE will not teach here the bare Diſtillation of Vitriol, to draw thereof an acid or corroſive Spirit, which commonly and improperly is called *its Oil:* But our intention is to make an exact anatomy thereof, that the Son of Art may the better apprehend what are the ſeveral parts thereof, and his judgment by conſequence be well and duly informed of the ſubſtances which are extracted from it, and of their Medicinal Faculties.

To

To prepare the Dew of Vitriol.

℞ As much as you will of purified Vitriol, put it in a broad mouth Cucurbit only eight inches high; place it in *B. M.* and having covered it with a Limbeck-head, and fitted a Recipient, the joynts well luted with a Bladder wetted with whites of Eggs; give it fire by degrees until the Water of the Balneo doth boyl; and thus proceed in this diſtillation until this degree of heat drives no more Liquor, and no more drops will fall. What you find in the Recipient, put in a Bottle, which ſtop with Wax and Bladder, by reaſon of a little of the volatile Spirit mixt in this Dew, and wherein doth conſiſt its greateſt vertue. It is given from ℈ j, to ℈ ij and iij, in Broth, or ſome other convenient Liquor, to thoſe that are troubled with Megrim and other pains in the Head; it allayes the heats and ebullitions of the Blood, and ſtrengthens the Entrals.

To draw the Acid Water of Vitriol.

AS the Artiſt muſt work with Method and Study, if he intends to make any progreſs; ſo likewiſe muſt he be a good Husband of his time, fire and veſſels. Wherefore let him have a Furnace in readineſs with a Sand Veſſel or *Capſula*, and the Sand warm in it; when he perceives that the *B. M.* draws no more of the ſubſtance of the Vitriol, becauſe it is a token to him that the matter hath need of a ſtronger degree of heat to be driven to yeeld any thing more; let him then draw the Cucurbit from the Balneo, and wipe it, to take off the moiſture from it, and place it all warm and luted upon one inch and a half thick of warm Sand, and let him put of the ſame, equally warm, round about as high as the matter goes; then the Recipient being fitted again, let him encreaſe the fire by degrees until the head of the Limbeck be filled with white Vapours, and that no more drops of the Liquor ſhall fall from the noſe of it; then let him remove the fire from the Matters and Furnace. Put alſo the Liquor which is in the Recipient in a Bottle, and ſtop it as the other; for it is not an uſeleſs Phlegm as many have conceited, which did deſpiſe it and throw it away, not well verſed with the anatomy of Vitriol, and the knowledge of thoſe Liquors which it yeelds by diſtillation. This Water hath but little acidity in it ſelf, but participates already of the Aperitive and Anodyne Vertue of Vitriol: which makes it to be very ſucceſsfully uſed for the cleanſing of the Reins, and ſoftening and allaying of all inward corroſions. It quenches the thirſt of Feaveriſh Perſons, and provokes Urine abundantly. This Liquor is alſo very good for waſhing of the Eyes, if you add a little Salt of *Saturn* with it; it takes away alſo Inflammations, and allayes the grief of corroding and malignant Ulcers, if they be waſht with it warm; and having a little of Salt of Tartar mixed with it, it takes away itching in the Skin, and drives away Scabs.

To make the acid Spirit and corroſive Oil of Vitriol.

TAke the dry matter left in the Cucurbit, after diſtillation of the two forementioned Liquors; beat it to a courſe Pouder, pour the Pouder in a glaſs or earthen Retort, cover it with one finger thick of ſuch a compoſition as may withſtand the moſt violent fire; place this Retort in a cloſe Reverberatory, and fit to it a capacious and large Recipient, which muſt alſo be well luted; and the Lute being dry, give it a gradual fire, as we have taught, when we treated of the diſtillation of the Spirit of Salt; but the fire muſt be driven much higher and longer with the flame of a very dry Wood, for it muſt be continued three dayes and three nights without any interruption, ſo as the Recipient may ſtill remain full of white Clouds and Vapours, and that at the end drop down red and blackiſh drops, which grow clearer towards the end, by which you may perceive the Operation to draw to an end, and that the fire hath drawn from the matter, as much as the Artiſt may and ought to hope for; though ſome weary themſelves unneceſſarily, continuing the fire, without intermiſſion, twelve or fifteen dayes: but they betray their skill in ſo doing, and ſhow how ignorant they are for the matter upon which they work, and much more of the ſphere of activity of the flame of the fire which they made uſe of. You muſt then remove the fire, when you perceive the ſigns we have noted, and begin to moiſten the Lute in the neck of the Recipient with a little warm Water, unleſs you will ſtay till the next day, which would be beſt: go ſlowly to work for fear of breaking any thing, and by an overhaſty precipitancy loſing on a ſudden what hath coſt ſo much labour and charge: Draw then the Recipient ſlowly away, and what you find in it, pour in a glaſs Retort; which having placed in Sand, and fitted a Recipient unto it, give a gradual fire until the drops begin to fall down, which taſte from time to time, to change the Recipient aſſoon as you perceive them to have an acidity; and after you have drawn two parts of the Liquor which was in the Recipient, remove the fire, and ſo ſhall you have 3 Liquors: the firſt whereof ſhall almoſt be of an inſipid taſte, but with a ſulphureous ſmell, which is a token of the volatile Spirit; and this mix with the ſowr Liquor, or keep by it ſelf for the ſame uſes. The ſecond hath a pleaſant and penetrating acidity or ſharpneſs, which is that they properly call *the acid Spirit of Vitriol*, uſed in Phyſick: for it is Diuretical, Diaphoretical, Aperitive, Inciſive, and reſiſts to putrefaction and inflammations. Wherefore it is of wonderful vertue againſt all Burning Feavers, occaſioned by putrid and malignant matters, and alſo againſt obſtructions of the Liver, Spleen, and Meſentery; it is good to reſtore Appetite, when loſt; it ſtrengthens the faculties of the Stomach, and doth correct the defects of it: It aſſwages Tooth-ach, if mixed with White-Wine, and gargarized in the Mouth; if you mix of this Spirit with Water of the Juyce of great Celandine, and rub with this mixture the ſcurf in the Head, it deſtroys the root of it, and kills that ill, harſh and corroſive humour which doth infect the Skin; it is given in Broths or ordinary Drinks of ſick Perſons. The Doſis muſt be to a pleaſant acidity or ſharpneſs, for otherwiſe it would ſet the Teeth on edge, and prove troubleſom to thoſe that would uſe it.

Filtrate the Liquor remaining in the Retort after the diſtillation of the acid Spirit through Glaſs beaten to Pouder, for otherwiſe it would corrode all other ſubſtances, being altogether corroſive; put it in a double glaſs Viol, and ſtop it with a glaſs ſtopple very cloſe. This is called *Oil of Vitriol*, though improperly, ſince it is neither inflammable nor unctuous: but the manner of expreſſion of Writers muſt be followed, from whom this Liquor had its firſt denomination, being too harſh and violent for inward Remedies, and onely fit and ſubſervient to other Chymical Works.

We will not ſpeak here of the Preparation of the ſweet Earth of Vitriol, called by ſome *Terra damnata*, or damned Earth, in regard it is deſtitute of its own Salt; this Earth and Salt are extracted of the matter remaining in the Retort after the diſtillation of the Oil and Spirit of Vitriol, which Chymiſts call by the name of *Caput Mortuum*, or Dead-Head. We ſhall defer to ſpeak of theſe two Particulars till we come to treat of Salification: The Artiſt muſt onely expoſe this *Caput Mortuum* to the free Air, in a place not open to the Rain, that it may attract the influences of the Heavens, and of the Air.

We could bring here the deſcription of ſeveral compounded Spirits of

Vitriol, and ſpecificated for ſome particular Diſeaſe: but we leave the choice thereof to the skill and fancy of the Artiſt, or the directions which he ſhall find in Writers which have largely treated thereof; We will only give for a taſte two Proceſſes or Preparations of it, by which he may be guided in any further work he ſhall intend or undertake thereupon. The firſt ſhall be a ſweet and pleaſant Spirit of Vitriol, the ſecond a very conſiderable Aperitive and rare Diſſolvent, both proceeding from the ſame Spring, but only brought by us to ſhew the variety and difference of Operation.

To prepare the Oil or ſweet Spirit of Vitriol.

℞ ℔ iij of calcined Vitriol between yellow and red, in an earthen Pot, not glazed, in an open fire; beat it to Pouder, pour it into a Cucurbit, and ſprinkle it with good diſtilled Vinegar until it be reduced to a Pap; ſtir the Veſſel without intermiſſion, and pour in it new diſtilled Vinegar three fingers high; put the Cucurbit in a vaporous Balneo, and cover it with a Blind-head, then during the ſpace of three natural dayes, give it a digeſtive fire; the fourth day draw off the Vinegar by decantation, and pour freſh Vinegar in the room of it, digeſting again the ſpace of three dayes, and extracting and taking off the Liquor by decantation; thus proceed ſeven times without omitting digeſtion; filtrate all the diſtilled Vinegar, which is impregnated with the vertue of the Vitriol, and put it in a Cucurbit in Aſhes; draw off the ſuperfluous Menſtruum by diſtillation, with a ſlow and graduate fire, to the conſiſtency of decocted Honey; this make into Pellets with Pebble-ſtones calcined to Pouder; theſe Pellets put in a Retort, and draw the Spirit and Oil thereof, as they call it, with a graduate fire of the requiſite heat; this diſtillation will require 24 or 30 hours of fire, or thereabout. The Liquor which you find in the Recipient, rectifie in a Glaſs Retort in Sand, and keep for uſe. This Spirit or Oil is of a pleaſant and ſweetiſh taſte, having in it the vertues of Vitriol mixt with thoſe of the ſubtil Tartar in the diſtilled Vinegar: wherefore it may be given with much ſucceſs in all Diſeaſes proceeding from groſs and tartarous matters, as Scurvy, Gravel, Great Pocks, Gout, Rheumatiſm's and Catarrhs, and generally in all Diſeaſes abounding with malignant, groſs and ſharp ſeroſities, as Leproſie, Scabs and Itch: for this wonderful Spirit doth rectifie the whole Maſs of the Blood by Urine, Sweats, and inſenſible tranſpiration. The Doſis muſt be from ℈ j, to ʒ ß, in Broths, Decoctions, White-Wine, or appropriated Syrups. The Theorical and Practical part of this Spirit might afford unto us a large field of Speculation; but having already ſpoken of it when we handled the firſt Menſtruum for extraction of the Tincture of Coral, where we made ſome reflection upon the action and mutual reaction of Vitriol and Tartar, we refer the Artiſt to that place.

The Tartarized Spirit of Vitriol.

℞ ℔ ij of Vitriol well purified and onely dryed, and ℔ j of Tartar of *Monpellier* waſhed in White-Wine, and well dryed; beat them to Pouder each aſunder, mix them exactly, and put in a glaſs Retort well luted, diſtil the Spirit in a cloſe Reverberatory fire with requiſite precautions; eſpecially take a care that the Recipient may be very capacious; or put one with three mouths, that there may be the more room to keep within bounds the furiouſneſs of this Spirit which is very violent; drive the fire from 48 to 60 hours, and then ceaſe. All what is come out, rectifie in a Retort in Sand three times at leaſt, and keep this Spirit in a well ſtopt Viol. Then take the *Caput Mortuum* which remains in the Retort, and put it to digeſt in the Dew of Vitriol in the vaporous Balneo the ſpace of 24 hours; ſeparate the Menſtruum by inclination,& begin the digeſtion with new Menſtruums, until it comes off with the ſame taſte as it was put in; filtrate all the extractions, and ſlowly evaporate them in Aſhes to a skin,then let it chryſtallize: But it will be more expedient for husbanding of time, to dry all the ſaline matter, into a white and pure Salt, in the vapour of a boyling Balneo, in an earthen Pan, or white earthen Diſh; for you muſt forbear uſing metallick Veſſels, becauſe this Salt doth eaſily and quickly contract the taſte and colour of Metals; and if the Salt did not prove white and pure enough, diſſolve it again in new Dew of Vitriol, and let it digeſt in a very gentle heat of the vaporous Balneo, that if any impurity ſhould remain, it ſhould be precipitated to the bottom of the Veſſel; the Liquor muſt be filtrated in the cold, then evaporated and dryed ſlowly and cleanly. Put this Salt in a double Veſſel or Blind-body, and pour upon it the rectified Spirit thereof; ſtop and lute the Blind-head, and put it to digeſt and circulate in *B.M.* in a ſlow and moderate heat the ſpace of three weeks; which being expired, open the Veſſel, and pour into a Retort all the matter contained in it, having firſt noted the weight thereof, and diſtil it in Sand, until it yeelds nothing more, by encreaſing of the fire; weigh the Liquor which is come forth, and cohobate it upon the Salt which did remain in the Retort; reiterate the diſtillation, and you ſhall find the Spirit to be encreaſed in weight, which is a token that the Salt aſcends into Spirit, cohobate and diſtil ſo long that all the ſaid Salt may come over the Helm; which done, put this Spirit in a Cucurbit, draw off the ſame gently in Aſhes; then encreaſe the fire ſomething more towards the end, and the Salt will remain in the bottom of the Veſſel; which having placed in Sand, give it a ſubliming fire, then will the Salt aſcend inſipid, pure and clean, leaving in the bottom its impurity and more corporeal parts; put this Salt in a Pelican, and having poured its own Spirit upon it, lute the mouth of the circulatory Veſſel with a glaſs Stopple, whites of Eggs and Quick-Lime, digeſt and circulate this matter the ſpace of ſeven natural dayes: and thus ſhall you have the moſt excellent and penetrating Spirit which Art can prepare; to which we cannot attribute enough of Vertue and Efficacy for preſerving and reſtoring of health; for it is an univerſal Aperitive, which never will fail in time of need. They that ſhall be acquainted with his excellency, both in reſpect of Phyſick and of Chymical Operation, ſhall never queſtion the truth of what I ſay: But I muſt give advice to the Artiſt to carry himſelf with circumſpection in this Operation, and not to grow weary of the length thereof, ſince he will receive in the end all the benefit and ſatisfaction which his hopes could entertain. This work doth not concern ſuch as think themſelves very great Artiſts, when they have attained to the Preparation of Mineral Chryſtal, Cremor of Tartar, and *Crocus Metallorum*; but contrariwiſe, is worth the labour of thoſe that are moſt conſummated in the Study, and moſt verſed in all the paſſages of a Chymical Laboratory; and it is onely for their ſakes that we have related here this excellent, but laborious Preparation, becauſe they only know that, *Dii laboribus omnia vendunt.*

The Precipitation of Vitriol.

THE common ſettlement of the diſſolution of Vitriol, is nothing elſe but a Metallick Earth and Oker, and is for the moſt part confounded with the true Precipitations, which are performed only by inſtillation of ſome kind of Salts or Spirits: but there is a great difference between the matters proceeding from them; wherefore we will ſpeak of it with the requiſite order.

To make the Metallick Earth or Oker of Vitriol.

℞ As much Vitriol as you will, diſſolve it in a full quart of diſtilled Rain-Water; This diſſolution put in a great Matraſs, and place it in a moderate heat the ſpace of four dayes, and all the metallick Earth or Oker of the Vitriol will fall in the bottom of the Veſſel; ſeparate the Water by inclination, and waſh this Earth, then dry it; it is uſed ſo for Sublimation.

To make the ſweet Sulphur of Vitriol.

℞ Of the pureſt of Vitriol you can get, and diſſolve it in Water of *May*-dew; digeſt the ſolution the ſpace of ſeven natural dayes in a vaporous Balneo, filtrate it the eighth day, and draw off again half of the Menſtruum by diſtillation in the boyling Balneo; draw out the Veſſel whilſt it is yet warm, and precipitate the Sulphur contained in the Liquor with Oil of Tartar *per deliquium*; let the Liquor grow clear by little and little, then draw it off by inclination; then by ſeveral effuſions of diſtilled Rain-Water, edulcorate the remaining Sulphur, and being exactly dryed, keep it for uſe. It is a very good Remedy againſt affections of the Breaſt; it may be adminiſtred from ij to x grains, in ſome Syrup, Lohoch, Lozenges, or Conſerve appropriated to the Diſeaſe. It is alſo ſucceſsfully uſed to mundifie and cicatrize evil Ulcers. It may alſo be ſublimated.

To make the Purging Sulphur of Vitriol.

℞ ℔ ij of Vitriol of Liege well depurated, mix it exactly with ℥ vj of filings of Steel very pure and clean; put this mixture in a great Matraſs, and pour upon it ſharp or ſowr Water of Vitriol four inches high; Then put it to digeſt in *B. M.* the ſpace of four dayes, ſtirring the Veſſel five or ſix times every day: This done, filtrate the Liquor, and draw off one half by diſtillation in Aſhes, then precipitate the reſt with Oil of Tartar made *per deliquium*; to ℔ iij of the Liquor, pour on, drop by drop, ℥ v of the Oil of Tartar, and proportionably if there be more or leſs: let the Sulphur ſettle, then decant the clear Liquor, edulcorate and exſiccate, as we have taught before. This Sulphur is a mild and commodious Purgative, very good for thoſe that have any indiſpoſition in the Breaſt or Lungs, or do incline towards Conſumption or hectick Feavers; it may be given from ij *gr.* to vj, in Conſerve of Roots of ***Enula Campana***, or Conſerve of the Berry of Eglantine, called ***Cynosbatos.*** But my advice is to thoſe which would proceed yet more warily, and with greater curioſity in obtaining the beſt Remedies, to digeſt this Sulphur in a ſlow heat, in a Matraſs ſealed hermetically, during the ſpace of forty dayes, and it will encreaſe half in Vertue, and the Doſis be leſs by half.

To make the fixed and volatile Sulphur of Vitriol.

Diſſolve ℔ vj of *Liege Vitriol* very well purified, in a ſufficient quantity of diſtilled Rain-Water; this done, put ℔ j of filings of Needles very clean in a glazed Pan; pour upon it this diſſolution, and ſtir them together, and place the Pan in ſome poſition where the Sun may freely play upon, and there leave it until the matter doth grow thicker by degrees, which you muſt ſtir often, and at laſt dry up wholly; then beat it to Pouder, and add ℔ j ß more of new filings of Steel, and ſprinkle it with diſtilled Rain-Water, until all be reduced to a pretty clear Pap, which dry again in the Sun, ſtirring it often; and thus proceed to the ſeventh time, until the matter takes up a very high red Tincture: then being well deprived of all aqueous moiſture, put it in a great Matraſs, and pour upon excellent diſtilled Vinegar four inches high, put it to digeſt in Sand, and ſtir it often; this digeſtion continue until the Vinegar be well tinged with a red colour; then remove it, and pour other in the place, and thus continue until the Vinegar draws no more Tincture. Filtrate afterwards all the Extractions, and divide them into two equal parts, one of which muſt be put in Aſhes in a Cucurbit, and all the Menſtruum thereof drawn off by diſtillation by a graduate heat to a dry bottom; then make the Lotion and Edulcoration of the matter with diſtilled Rain-Water, until the Water comes off taſteleſs from it; after this, dry it gently between two Papers in a moderate and equal heat; and thus ſhall you have the burning and volatile Sulphur of Vitriol, mixt with that of *Mars*, eaſie to take flame, and even to be conſumed wholly away if it be ſet on fire, yeelding a purple flame as Cinnabar doth, which hath ſtore of Sulphur in it ſelf; keep it for uſe for Aſthmatick Perſons, inſtead of flower of Brimſtone, being much more efficacious and full of vertue; it is given from iv *gr.* to ℈ ß, in Lozenges with Benjuin Flowers, or in Bolus, with Conſerve of Flowers of Colts-foot.

The other half of the Liquor kept alſo as before, muſt be put filtrated in *B. M.* in a Cucurbit. Then draw off one half, or the two third parts of the Menſtruums, and precipitate the remainder with Oil of Tartar made *per deliquium*, poured drop after drop, until no precipitation will longer enſue; let the fixed Sulphur ſettle in the bottom of the Cucurbit ſome ſpace of time; then ſeparate the Liquor from it, waſh and edulcorate the remainder, and dry it according to Art; put this Sulphur in a Matraſſe or Philoſophical Egg, and concoct and ripen it in an equal and fermentative heat the ſpace of a Philoſophical month, and it will become of a fair red and high colour. It is a true preſerver and reſtorer of Health, being given four times in the month as a Preſervative, and three times in the week for a Curative, from j *gr.* to viij, in Confection of Hyacinth faſting, drinking upon it a ſmall glaſs of ſome good Wine, or Cordial and Stomachal Drink: for this Sulphur drives the irradiation of its vertue through the whole body, and expels from it all impurities, either ſenſibly by Sweat or Urine, or inſenſibly by gentle and amicable tranſpiration. It may even be raiſed higher, but we keep that proceſs for the end, when we come to ſpeak of the Extraction of Vitriol.

The Sublimation of Vitriol.

WEE have juſt immediately before taught how the Sulphur of Vitriol, or its Metallick Earth was to be ſeparated by precipitation, and the ſublimation teaches how the Flowers of it are to be ſevered from it, which are nothing elſe but the ſubſtance of Copper or Iron, which is found in all the kinds of Vitriol. Our purpoſe of giving this Preparation, is onely to demonſtrate to the Artiſt the truth of the compoſition of things. Take then equal parts of Metallick Earth, or Oker of Vitriol and Armoniack Salt, and beat them to Pouder each by themſelves; then mix them exactly together, and ſublime in Sand in a Cucurbit ſomewhat low, covered with a Still-head; give it firſt a ſlow fire, and encreaſe it by degrees, until you perceive that no vapour more aſcends; then remove the fire, and let the Veſſels cool, and take from the Limbeck-head and ſides of the Cucurbit the ſublimated matter, and having put it in a Matraſs, pour upon it common Water; then place the Veſſel in *B. M.* and digeſt it in a moderate heat the ſpace of 24 hours, and the Water will diſſolve the Salt, and the ſubſtance of Metallick, Martial and Venerean Flowers falls to the bottom in ſubtil Pouder, which muſt be ſeparated from the Liquor, loted and edulcorated, then dryed. It is a very good Aſtringent and deſiccative Remedy for all kind of Ulcers, and chiefly for any pain in the Eye. It breeds and repairs fleſh, mundifies and ſiccatrizes better then any other Remedy.

The Salification of Vitriol.

WEE have deferred hitherto to ſpeak of the *Caput Mortuum* of Vitriol remaining after diſtillation, ſaying only before, that it was to be expoſed to the open Air and influence of Heaven in a covered place, expoſed to the free paſſage of the Winds: but we will now teach here how to extract the Salt thereof, after it has been penetrated by the Air during the ſpace of ſix weeks or more. Take it then after that time and put it in a Cucurbit, or which is yet better, in an earthen Pan, and pour upon it diſtilled Rain-Water, or new and freſh River-Water, and ſtir the matter as you pour the Water in, otherwiſe it would grow hard in the bottom; digeſt all the matter in Sand, and ſtir it often, that the Salt may the better be extracted; then filtrate the Liquor, and ſlowly evaporate till it contracts a skin, and let it ſhute into Chryſtals, and go on thus evaporating and chryſtallizing until you can get no more Salt; this Salt dry gently between two Papers, and keep for its uſes. After this, take care to edulcorate well the red browniſh Earth which remains after the Salt is extracted, and to dry and keep it for its uſe, which is both inward and outward. Internally it is a very good Remedy againſt the bloody Flux and Dyſentery; it is alſo very good to dry running of the Reins, and ſtop the fluxion of Gonorrhæas, the Whites and Reds in Women, and Hemorrhagy, and above all againſt ſpitting of Blood: externally applyed, it is a very good Emplaſtical and Balſamical Remedy, which mundifies and cicatrizes gently and without pain, all Wounds and Ulcers: wherefore it is uſed in Ointments, Cere-cloths, Liniments and Plaiſters.

The true Vitriolick Salt which we extracted from this Earth, muſt be white, inclining upon the pale red of Roſes, and chryſtallized as the Salt of *Saturn* in ſmall ſtreaks, long and thin; the taſte muſt rather incline towards mite then acerbity or harſhneſs, for it muſt not keep the *Idea* or Character of Vitriol, nor take the Cubical or Lozangical Figure; otherwiſe

wiſe it would not be the true Salt of Vitriol; this Salt being ſo qualified as we have deſcribed, is full of many excellent Vertues, which makes it to be a fit Remedy for Epilepſie, and for ſuch as are troubled with frequent and great Head-aches, proceeding from the corruption and ſuperfluity of matters ſtuffing the Stomach. It is given alſo againſt Pleureſie, Malignant and Peſtilential Feavers, and Swoonings, and Deliquiums proceeding from ſome repletion of the Ventricle, as alſo againſt obſtructions of the Liver, Spleen and Reins. It may alſo be drawn into the Noſtrils to provoke ſneezing, and unburthen the Brain from ſuch ſerous and excrementitious matters, which do oppreſs and cauſe the diſtention of its Membranes; for it is an excellent and ſpecifical Sternutatory. The Doſis muſt be from vj *gr.* to ℈ ij and ʒ j in Broth, Beer, or ſome appropriated Decoction.

The Extraction of Vitriol.

BY the extraction of Vitriol, we do here underſtand nothing elſe then the Operation which is made to draw the Tincture of it, which can proceed of nothing elſe but the Sulphur thereof; wherefore we will teach two ſeveral Extractions of this Sulphur; the firſt of the Volatile Sulphur, the ſecond of the Fixed; that as the Proceſſes are various, ſo the Spirit of the Son of Art may be the better enlightned to penetrate further into the Search and Operation which will be requiſite and neceſſary to obtain to the poſſeſſion of the greateſt Arcana's which are concealed in natural Bodies.

The Tincture or Eſſence of the Sulphur of Vitriol.

BEfore we come to the extraction of the Tincture, the body of the Sulphur muſt have been open and deprived of all its materiality and courſeneſs, that it may communicate its Soul to the Menſtruums which is uſed for this purpoſe; Take ℔ j of the ſweet Sulphur of Vitriol very dry, and mix it with ℔ ß of Salt of Tartar very white, very pure, and very dry; this mixture being put in a Retort, place it in a cloſe Reverberatory, upon the cover of an earthen Pot turned upſide down; having the thickneſs of one inch of Sand upon it, and fit to it a well luted Recipient; then give it a gradual fire, and go on ſtill encreaſing the fire, until the red Oil begins to come forth by drops; then keep the fire in the ſame tenor and degree, and continue it until by that degree of heat nothing will come forth more, which is a ſign the laſt and extream degree of heat muſt be uſed, which is called *the fire of Suppreſſion*, being a violent fire kindled both upwards and downwards, which muſt be continued the ſpace of four hours; that being over, remove the fire and let the Veſſels cool. The Liquor or red Oil muſt be poured into a ſmall Cucurbit, pouring upon it, drop by drop, very good diſtilled Vinegar, until the internal Sulphur of the Vitriol which was aſcended into Liquor, be precipitated to a red Violet purple Pouder, which muſt afterwards be ſeparated from the Liquor, and waſhed to edulcorate, and afterwards dryed very gently. This precious Pouder put in a blind Matraſs, and pour upon it true Alkohol of tartarized Wine three fingers high; then ſtop the Veſſel well, and lute it with a Bladder thrice doubled, made wet in whites of Eggs beaten in Water. This Veſſel place in a vaporous Balneo in ſhred Straw the ſpace of three weeks, or until the Artiſt doth perceive that the eſſence of this Sulphur hath forſaken its matter, and ſwims above the Spirit of Wine in the form of a Wine diſtilled from Cinnament; which ſeparate with the Funnel, after the Veſſels are grown cold, and keep it choicely and carefully in a well ſtopped Viol. All that have treated of this Eſſence of Sulphur of Vitriol, do attribute unto it admirable Vertues, and equal it to the Tincture of Antimony: It is given from j drop to vj, in Balm-Water, made with the Plant, digeſted and fermented with its own Juyce, to drive away inſenſibly, and yet naturally, all what can be hurtful to the Body, and may be the occaſional cauſe of the irritations of the *Archeus*; it provokes Appetite and Venery, ſtrengthens the Matrix, and allayes all irregular motions of it, rectifies and encreaſes the Seed, and makes it prolifick and fruitful in either Sex; it doth wonders in Dropſies, if adminiſtred in Parſley-Water; hinders all Meteoriſms and violent riſing vapours of the Spleen, given in Water of Saſſafras: briefly, it may be ſaid to be *Paracea* of Vitriol; you muſt obſerve that the uſe of it is to be continued according to the greatneſs and ſtubbornneſs of the Diſeaſe; but to preſerve health, it will ſuffice to take of it two or three times in a month.

The Tincture of fixed Sulphur of Vitriol.

WEE ſaid above, that we did refer our ſelves to ſpeak in this place of the extraction of fixed Sulphur of Vitriol, the Preparation whereof we have already taught, and it is performed in this manner; ℞ ℥ iv of this fixed Sulphur of Vitriol, concocted and maturated in it ſelf, and put in a Pellican; ℞ alſo ℥ vj of tartarized Spirit of Vitriol, and as much pure Alkohol of Wine; unite them together by diſtillation in *B. M.* then pour them upon the Sulphur into the Pellican; lute exactly the Joynts thereof, and put it to digeſt and circulate in a vaporous Balneo, until you ſee the Liquor grown blood red; then remove the fire, and decant what you find to be pure and clear, into a ſmall Cucurbit, to draw off the half of a third part of the Menſtruum,and keep the reſt as a Remedy yet more univerſal in Operation and Vertue, and more precious then the foregoing. We will nevertheleſs attribute unto it no other faculty; for whoſoever can prepare it, ſhall never fail to know alſo the way to uſe it. The Doſis may be from j drop to iv, in Broth or Wine.

SECTION VI.

Of Sulphureous Minerals, and Sulphurs.

TO put a Period and Concluſion to this Treatiſe, it remains onely we ſhould ſpeak of inflammable and ſulphureous Minerals; and as we have ſaid, That a Chymical Philoſopher could not apprehend the Generation of Metals or Minerals, but by comparing them with other natural Productions, more palpable and more obvious to his ſenſes; ſo may we lawfully ſpeak the ſame thing concerning the Generation of ſulphureous Subſtances, which can only be conceived by comparing the ſame with other fat and oily ſubſtances which Nature doth digeſt, concoct, and bring to perfection in the Family of Vegetables and Animals: for as the Oils, Rozins and Gums of Vegetables; the Fat, Tallow, Greaſe and unctuous excrements of Animals are produced in them, by the exceſs and ſuperfluity of the fat and ſulphureous part of their food; ſo likewiſe ſulphureous Minerals do proceed from the introduction of the Character of the Sulphur and Light in the receſs and moſt abſtruſe parts of the Matrixes of Minerals, where this Fire works perpetually towards the generation,encreaſe,digeſtion, concoction and perfection of ſeveral ſulphureous Mixts according to their ſpecies and kind; ſuch as are *Arſenick,Brimſtone,Bitumery, yellow Amber, Ambergreaſe, Sperma-*

ceti, *Aſphaltum*, *Naphta*, *Petroly*, *Sea-coal* and *Jet*. We will give ſome Examples of the manner of working upon the chief ſorts, to put an end to what we have begun, with the ſame punctuality and clearneſs, which we have endeavoured to uſe hitherto.

Of Arſenick, and its Chymical Preparation.

ARſenick is a Soot or Mineral Juyce coagulated, which is fat and inflammable, it is called alſo *Orpiment*; there are three kinds of it; the firſt is white, which is that properly we moſt uſe, and is called *Arſenick*; the ſecond is yellow, called *Realger* or *Orpiment*; and the third red, called by the Greeks *Sandarick*. The white and chryſtalline Arſenick is not natural, but prepared by Art, with equal parts of common Salt, and fragments of Orpiment mixed and bruiſed together, and ſublimated afterwards between two Pots. The moſt dangerous and pernicious of all, is the red kind; the yellow much leſs, being not ſo hot, not ſo much exalted as the red; and the white is the leaſt hurtful, becauſe part of his heat, corroſiveneſs and venom, hath been corrected by the Salt with which it was ſublimated. All three are deadly poyſon, and moſt dangerous; for they poſſeſs ſo evil and ſo ſtrange an acrimony, and ſo great an enemy to the vital Balſom, that they immediately raiſe fearful and ſtupendious accidents, if inwardly taken, or outwardly applyed; for they bring immediately Convulſions, cauſe percluſions of hands and feet, cold ſweats, palpitations of the Heart, Syncops and ſwoonings, vomiting, eroſions, gripings, noiſe and great rumbling in the belly, and intolerable thirſt, and prodigious heat. All this malignity nevertheleſs may be taken away, and corrected by Chymical Preparation, and the venom of it made a Remedy capable of much good both outwardly and inwardly: but notwithſtanding this unprepared Arſenick is ſometimes uſed; for in time of Plague it is a Preſervative worn in a Bag, hung to the neck in form or manner of an *Amulet* or *Periapt*. It is alſo uſed in Depilatories, and ſometimes with other Ingredients for opening of Cauteries or Iſſues. Now all the end of preparing Arſenick, muſt only tend to remove its acrimony, and dulcifie it, to ſeparate the impreſſion and *idea* of the venom from it, which cannot be performed without the help of Chymical Preparation, which is threefold; *Sublimation*, *Fixation*, *Reſolution* or *Liquation*.

The Sublimation of Arſenick; To prepare the dulcified Arſenick.

TAke as much of chayſtalline Arſenick, very pure and clean, as you think fit; beat it to a Pouder, and ſublimate by it ſelf in a Matraſs in Sand with a graduate fire. The Sublimation being ended, let the Veſſel grow cold, then break it, and throw away the moſt volatile and ſublimated part, reſembling to the fineſt flying Meal in grinding; but that part which is more compacted, beat in a Marble Mortar, and put it in a Crucible covered with another luted unto it; which place in a circular fire, and digeſt and bake gently the ſpace of three or four hours: this done, mix your Arſenick, ſo prepared, with Scales of Braſs, ſuch as do fall from the Anvil of Braſiers, and ſublimate this matter once more; for this Copper half calcinated, draws to its ſelf the groſs venom and malignity of the Arſenick, as digeſtion and baking did deprive it from its volatility and blackneſs. This done, ſublimate it three times conſecutively with common Salt melted, and this Salt will perfect the concoction and ſweetning of it, ſo as it may be afterwards uſed inwardly and outwardly, after it hath been well waſhed with diſtilled Rain-Water, until the Water comes away inſipid from it. But before it is put to uſe, you muſt try whether or no it be duly corrected, which will eaſily be known by throwing the ſame upon melted Copper: for if it doth blanch it, and that the white Tincture be fair, and can abide a ſecond melting, it is an evident ſign that it is deprived of its malignity: but if it ſpoils and blackens the Metal, it argues the contrary. It may alſo in part be diſcerned by ſmell; for crude and ill prepared Arſenick hath an unpleaſant and ill-ſavoured taſte, which immediately ſtrikes the Brain, and diſaffects the Heart, whereas that which is corrected gives no offence at all. Many do highly extol the vertues of this dulcified Arſenick: but my advice to thoſe that are skilful in Remedies, is, to uſe rather ſuch as are taken from *Mercury* and *Antimony*, then prepared from this Mineral, becauſe it leaves the mind ſtill more at reſt and ſatisfied: but it may uſefully be applyed outwardly in the cure of the moſt dangerous and ſtubborn Ulcers, and chiefly when it is converted into Liquor by reſolving it in a cold Cellar. If any will nevertheleſs make uſe of it in deſperate Diſeaſes, and where the danger bids to play quit or double, he may make uſe of this Sublimate of dulcified Arſenick in infuſion from iij to viij grains.

To make the Diaphoreticvl Rubies of Arſenick.

SUblimate three times your Arſenick without addition, and this ſublimation muſt be performed in a Cucurbit, that the volatile Sulphur may the better ſeparate it ſelf in the upper part of the Alembick; for it riſes in the form of a very ſubtil Pouder, which at every ſublimation muſt be thrown away, becauſe it is the moſt pernicious and venomous part of the Arſenick. That which you find compacted, and in Chryſtals, take and grind with its equal weight of Flowers of Brimſtone, and ſublimate in Sand, and you ſhall have a chryſtalline Arſenick red as ruby. Theſe Rubies are given againſt Diſeaſes of the Breaſt, and chiefly when the Lungs are ſtuft with craſs, tartarous and mucilagineous matters. It is alſo good to provoke ſweat in malignant and venomous Diſeaſes. The Doſis may be from iij *gr.* to viij, in pectoral Conſerves, or in extract of Juniper Berries. This Remedy is alſo very excellent for the cure of all obſtinate, corroſive, fiſtulous, cancerous and dangerous Ulcers; for it kills all the venom by which they are generated, if you have care to purge the Patient at the ſame time with ſome Mercurial Remedy, and adminiſter unto him every day Antimonial Tincture in vulnerary Potions.

The ſame kind of Ruby may be prepared out of Orpiment: for as we have already ſaid before, Arſenick is nothing elſe but Orpiment ſublimated with Salt, and in ſome manner already corrected. It may be exhibited in the ſame Doſis, and againſt the ſame Diſeaſes.

The Fixation of Arſenick.

TAke one part of pure chryſtalline Arſenick, or what is yet better, Arſenick already ſublimated, and two pints of purified Salt-peter, reduce them each ſeverally to Pouder, and mix exactly; then put in a great Crucible, which cover with another, having a hole in the bottom, that the malignant and noxious vapours may eaſily come forth; lute both Crucibles together, and let the Lute dry very well; put them in a circular fire, encreaſing it by degrees the ſpace of three hours, to exhale and evaporate the moſt dangerous part; then encreaſe again the fire, and let it ſo continue the ſpace of eight or ten hours, and let the Crucible be well encompaſſed with Coals towards the end. The Veſſels being cooled, take off the matter, and waſh it with Rain-Water, and when the Water comes out taſteleſs, dry the Pouder which you find in the bottom, which will be very fixt and white. They that will yet be more confident of the fixative, muſt reiterate three times their Operation with new Niter, waſhing well the matter at every time. This Pouder is only uſed in the Preparation of the fixed Sudorifick Arſenick, and the Oil of it *per deliquium* in a Cellar.

To prepare the fixed Sudorifick Arſenick.

℞ As much as you will of the fineſt Pouder of Arſenick; imbibe it with Oil of Tartar *per deliquium* to the conſiſtence of a liquid Pap in Sand or Aſhes, ſtirring it with a Slice of Glaſs or Spatula; this imbibition and exſiccation reiterate three times. Bray this mixture afterwards in a Marble Mortar with common *Aqua Vitæ*, and the Pouder after diſſolution of the Salt of Tartar, will remain in the bottom; this pouder muſt be edulcorated and dryed, which may be given in Bolus, from *gr.* ſs, to v, in Treacle, or extract of Elder-Berries to provoke ſweat: but the Mineral Bezoar is better and ſafer then this Remedy, unleſs outwardly applyed.

The Liquation or Reſolution of Arſenick.

THis Liquation is nothing elſe but the reſolution of the fixt Pouder of Arſenick into Liquor in the Cellar, or elſe the reſolution of Butter of Arſenick by *deliquium*; this Butter is prepared in the ſame manner as that of Antimony, wherefore we do not inſert the manner here. Both theſe Liquors are uſed againſt malignant Ulcers of what nature and condition ſoever they be, but muſt not be applped alone, but mixt in Plantain Juyce Water, or Arſmart or Cultage, until theſe Waters may be endured on the tip of the tongue; then warm them, and ſo you may waſh venereous, cancerous, hollow, fiſtulous Ulcers; as alſo the bitings of mad Dogs. They muſt be alſo applyed upon the ſaid Ulcers or others with Feathers, or Fillets dipt in it.

Of Brimſtone, and its Chymical Preparation.

IT is not without reaſon that the Greeks gave to Brimſtone the name of θεῖον, that is to ſay, Divine; for we muſt confeſs, that all Sulphurs have in themſelves ſomething heavenly and great, being nothing but the production of Salt, Spirit and Light: and as Light doth eaſily penetrate and reach every where, ſo do likewiſe Sulphurs by their odour and colour extend and communicate themſelves far and broad, and that with an almoſt unconceivable efficacy. But this is not the place to ſpeak of the internal ſulphurs of things, which do conſtitute to the beſt part of their Eſſence and Being: for we will now treat only of the Rozin and earthly fat of the Earth, which is mixed with ſome portion of an acid and vitriolick ſubſtance, commonly called *Brimſtone* in Shops and Chymical Laboratories. There is two kinds of it, the one Natural, the other Artificial: the Natural is that which is called *Sulphur Vivum*, or which hath not paſſed through fire; and the Artificial is that which is extracted from thoſe Peble-ſtones or Fire-ſtones, whereof we have ſpoken in the Operations of Vitriol; they that will know how it is made, muſt conſult the moſt learned ***Georgius Agricola***, which hath wrote about Metallicks and Minerals.

The Artiſt muſt for his Operation chuſe the pureſt Brimſtone, as that which is of ſmall cakes of a gray colour inclining to green, eaſie to inflame, burning without intermiſſion, and ſending forth a more blewiſh then whitiſh flame; and if this Brimſtone is not to be met with, let him have recourſe to yellow Brimſtone, which is in bigger Cakes, and may be ſubſtituted in the place of the other: he muſt nevertheleſs try whether it eaſily inflames and burns conſtantly; for if it doth not ſo, it is too much indigeſted, and by its eaſie extinction, doth ſhew it ſelf to participate yet too much of Vitriolick Nature. The Vertues and Qualities of Brimſtone are noble and efficacious before its Preparation; for it is generally devoted to the Breaſt, and the cure of all Diſeaſes which do moleſt and afflict the ſame; it opens, cuts, reſiſts putrefaction and venom, as alſo the biting of venomous Creatures; it provokes ſweating, ſoftens and allayes the irritations and irregular motions of the ***Archeus:*** wherefore it is uſed againſt Pthiſick, Cough, Aſthma, Peſtilence, generally againſt all malignant, putrid and peſtilential Feavers. If it be outwardly applyed, it reſolves mightily all hardneſs of Tumors, doth cure corroding Tetters or Ringworms, Scab, Itch, and hinders itching in the Skin. But if crude Sulphur hath ſo noble and ſo great vertues and proprieties, what may not be expected from this Mineral, when according to the Precepts and Directions of Chymiſtry, which only aims at the correction and melioration of ſubſtances upon which Artiſts do work, it ſhall be either opened or fixed, diſſolved or coagulated, precipitated or ſublimated! the Sons of Art ought then to ſpend their time and care in working upon this Mixt, as upon one of the chief Inſtruments put in their hands by the power of the Creator, to draw from it variety of noble and good Remedies, with which he may charitably ſupply the wants and neceſſity of many poor Patients.

The general Preparations which are made upon Brimſtone, are, *Sublimation, Precipitation, Diſtillation, Infuſion* and *Extraction*. We will according to our accuſtomed method, give ſome Examples of all theſe Operations, that the Artiſt may well apprehend the manner of working, and learn alſo the Vertues and Doſis of Remedies proceeding from it.

The Sublimation: To make the Flowers of Brimſtone.

As we have ſaid heretofore, that Tartar was purified by diſſolution, percolation or ſtraining, and chryſtallization, and Antimony by its reduction into Regulus; ſo do we ſay here, That the Brimſtone is only purified from its feces and earthly ſuperfluity, by ſublimation into Flowers, which are abſolutely nothing elſe but a well purified Brimſtone; to prepare well theſe Flowers, you muſt chuſe of the beſt Brimſtone, and bray it groſly; then put a Cucurbit of Earth in Sand, the bottom near the plate of Iron on which it ſtands, having but the thickneſs of a finger of Sand between; put ℔ ß of Brimſtone at every time, and cover it with a Head which muſt not be luted; have another alſo warm in readineſs to ſubſtitute into the place of this which lyeth on the Cucurbit, when it ſhall be filled with Flowers; after you have given it a gentle and gradual fire of ſublimation: there muſt alſo be a ſmall Matraſs for a Recipient, to receive at firſt a little portion of ſharp fine Spirit, which riſes before the Flowers, and condenſeth into Liquor in the Limbeck. Thus proceed, taking away the Flowers, and ſubſtituting a head to the former taken away, until you perceive the greateſt part of the Sulphur to have aſcended into Flowers; after which you may put again another ℔ ß; and thus go on till you have enough for your purpoſe. But you muſt be nimble in exchanging the Heads or Limbecks, leſt that the Air ſhould ſet the Brimſtone on fire; and if that ſhould happen, let it be extinguiſhed with Aſhes or Burnt-Allom. You muſt alſo regulate the fire conveniently until the ſublimation begins to work, and entertain it in the ſame ſtate; otherwiſe too much heat would melt the Flowers, before they were ſufficiently carried up into the Limbecks Head.

Now there are ſome that do add Colchotar with the Brimſtone, and melted Salt, to be able more boldly to give it fire, thinking alſo by this way, to draw more pure and ſubtil Flowers. Others do mix alſo Bolus, or *Terra Sigillata*, which we do much better approve of then the proceſs of thoſe who think it enough to mix only Brick-flower, or ſmall Brick-duſt, becauſe the Oriental Boluſſes, or Sigilled Earths have in themſelves a ſolar

Sulphur, which joyning with the Flowers of Brimſtone, renders them more efficacious. But we altogether diſapprove of thoſe, who with the Brimſtone do mix Gums and Aloes, becauſe the ſublimation cannot be performed until the Gums alſo burn, what care or precaution ſoever is had in it: wherefore it is much better if the Gums beaten to ſmall Pouder, be mixt with the Flowers of Brimſtone already ſublimated; or what will be much better, the vertue of both be jointly extracted, as we ſhall teach hereafter. The Flowers of Brimſtone may be three or four times ſublimated, for a greater depuration, concoction and maturation by the reiterated action of the fire, which thus perfects by degrees, what Nature had not yet accompliſhed, by reaſon of the heterogeneous and terreſtrial mixture of matters.

The Flowers of Brimſtone reſiſt putrefaction, provoke ſweating and dry humours. They are given with very great ſucceſs againſt Peſtilence and all malignant Feavers, whether uſed as a curative or preſervative Remedy. They are alſo of a ſingular uſe againſt Aſthma's and ſhort Breath, Diſeaſes of the Lungs, inveterate Coughs, Suffocations of the Breaſt, Catarrhs and Fluxions. There is not above ℈ ß given for preſervative, but for cures of Diſeaſes it is adminiſtred from ℈ j to ʒ j. They are for the moſt part mixed in Lozenges or Opiats, and often alſo given in new-layd Eggs: but if you deſire to quicken more their working, give them with Treacle, Conſerve of Roots of Enula-Campane, or extract of Juniper-Berries. There are ſome yet that ſublimate the Flowers of Brimſtone with red Coral, and extract the Tincture thereof with Oil of Aniſeed, which they give to Conſumptive Perſons, as a true ſpecifick Remedy for their cure: but all theſe contrivances depending from the knowledge and experience of Phyſitians, we ſhall not inſtance upon any here to exemplifie, it is enough for us to have taught the beſt and ſureſt way of performing the plain ſublimation; for whoſoever can make the ſimple Flowers, ſhall be in much leſs danger of erring in the preparation of thoſe that are compounded.

The Precipitation. To prepare the Milk, Cremor, Butter, or Magiſtery of Brimſtone.

WEE have ever recommended the choice and purity of Materials, which makes us again to enjoyn hereunto the Sons of Art, not to ſpare the fair Salt of Tartar in the diſſolution of Brimſtone, although ſeveral Authors content themſelves with Aſhes of Wine-Lees, or Glaſiers-

Aſhes, which are the Salt of the Herb *Kali*, to make this Preparation: but beſides, that they cannot well filtrate their Tincture, by reaſon of the viſcoſity and clammineſs of the Aſhes, the Remedy is not ſo good, ſo fair, nor endowed with the requiſite vertue, becauſe theſe Salts have not the penetrating and fiery vigour which is required for the diſſolution of Brimſtone, and the concoction and maturation of that Mineral; and this part muſt the Artiſt heed, becauſe the good or evil of his Operation depends from it; therefore you muſt proceed in it as followeth.

℞ Flowers of Brimſtone twice ſublimated, at leaſt ſome part thereof, and three parts of very pure and white Salt of Tartar; put them in a gray earthen Pot, or a glaſs Cucurbit, and pour upon xij or xv p. of diſtilled Rain-Water, cauſe them to boyl together in Sand the ſpace of five or ſix hours, or until all the ſubſtance of the Brimſtone be diſſolved, and the Liquor clean, and tinged with a very high red; and as the ebullition cauſes the Menſtruum to leſſen in quantity, add to it ſome other warm, ſtirring continually the matter, to haſten the ſooner your diſſolution. Moreover, the mixture of the Salt of Tartar and Flowers of Sulphur muſt have been made before in a Marble Mortar warm and dry. The diſſolution being duly made, warm a great earthen gray Pan, putting in it the clear part of the diſſolution, without any previous filtration, which cannot be ſoon enough performed, the Brimſtone returning into a body as ſoon as the Menſtruum begins to cool; pour upon the Tincture very good diſtilled Vinegar, ſprinkle it every where, until the whole turns into a Liquor as white as Milk; which when you ſee, fill up the remainder of the Pan with clear and pure Spring-Water, to begin the edulcoration and ſetling of it; then cover it, and leave it the ſpace of 24 hours in a ſecure place, and ſeparate after that the clear Liquor by inclination; then pour new clear Water upon the milky ſubſtance ſetled in the bottom, and thus continue the lotion thereof until both the ill ſmell, and lixivial taſte of the Salt of Tartar be gone away. But note, that the firſt Water muſt not be thrown away, but contariwiſe evaporated; and ſo you ſhall find again your Salt of Tartar, which reverberate in a crucible to redneſs; then diſſolve and filtrate, and it will be as good and as pure as before, to ſerve in the ſame Operation, or any other whatſoever: You muſt waſh the Magiſtery of Sulphur for the laſt time in equal parts of Cinnamon, Roſe-Water, and then dry it ſlowly and keep it for uſe.

But becauſe this Magiſtery cannot be made in ſmall quantity, and that the Artiſts are not alwayes provided with Salt of Tartar and diſtilled Vinegar, we will teach them a good and ſure way, to prepare with ſmall expence, and at all times a Milk of Sulphur of Brimſtone, which in vertue ſhall not be inferiour to the former. The Doſis and Faculties whereof we will declare after we have ſpoken of the Preparation of the other.

The true and infallible manner of preparing the Milk of Sulphur.

℞ Of good Quick-Lime that hath not been expoſed to the open Air, ij p. and j p. of good green Brimſtone in ſmall Cakes j p. mix them exactly together in an Iron Mortar by a long trituration, and afterwards let them boyl in a good quantity of Rain-Water in a great Iron Cauldron, ſtirring continually with an Iron Slice, until three parts of the Water be boyled away, and the remaining be as red as blood by the diſſolution of the Brimſtone; run it then warm through the ſtraining bag, and let the ſtrained Liquor cool, then with new made Urine precipitate before it grows cold; this Magiſtery ſuffer to ſettle, and ſeparate the upper part of the Liquor, and waſh it 12 or 15 times with warm Spring-Water, and when it hath no more ill taſte or odour left, waſh it as the foregoing Roſe and Cinnamon-Water, and let it dry gently, to keep for uſe. The Remedy is called ***the Balſom of the Lungs***, which by the eradiation of its vertue, conſumes and dryes up all malignant, ſerous and watery ſuperfluities. Wherefore it is uſefully exhibited to thoſe that are tormented with melting and ſuffocating Rheumes and Catarrhs, to Aſthmaticks and Phthiſical Perſons, and ſuch as are troubled with old and inveterate Coughs, or ſubject to Cholick and Ventoſities, which it doth hinder and diſſipate. It is given alſo to thoſe which are troubled with malignant humours and ſeroſities in the joynts; it facilitates Expectoration, and wonderfully ſtrengthens the Breaſt. The Doſis may be as much as will turn Cinnamon or Balm-water to a milk-white: It is given every day to the Patient morning and evening, one ſpoonful at once. Though this Remedy be highly celebrated amongſt Authors, yet our advice is to truſt rather to the Tinctures extracted from it, than to this body, yet too courſe and material to hope from it all the good and commendable effects which are attributed unto it; we do nevertheleſs leave it to every ones liberty to make uſe thereof, until the truth of our Aſſertion be better known by ſtudy and practice, which are the two Touchſtones by which things are to be examined and known.

The Diſtillation of Sulphur.

THE Sons of Art have ſought long how to find a way of diſtilling from Sulphur of Brimſtone, a good acid Spirit, which they improperly call ***the Oil of Sulphur***, and to draw a quantity from it, which hath cauſed a hundred manners of contrivances and proceſſes upon this Subject. They alſo have endeavoured to turn Brimſtone into an unctuous Oil, which might be fit both for inward and outward Diſeaſes, wherein every body hath alſo brought in his mite of experience and induſtry to attain that end: but as we have found that Brimſtone hath been Vitriol before it could attain the Character of Sulphur; our wonder hath been the greater, that they ſhould have laboured ſo much to get out that acid Spirit, ſince they do confeſs and ſay themſelves, that the Spirit of Vitriol is like in Vertue and Operation to that of Brimſtone; and it will be eaſier to draw ℔ x from one, than ℔ ß from the other. We muſt confeſs notwithſtanding, that there ſhall be ſomething found more quick and ſubtil in the acid of Brimſtone, than in that Vitriol, becauſe the ſubſtance from which it is extracted, hath been more exalted, more concocted and ripened then Vitriol, which is much inferiour in theſe reſpects, and conſequently more undigeſted. Wherefore we will declare here two wayes, which have ever been very ſucceſsful unto us to draw the acid of Sulphur or Brimſtone. After which we will alſo give the method of turning the body of Brimſtone into Oil, properly ſo called, which will be more unctuous and inflammable; and is a very conſiderable Remedy both in Phyſick and Surgery.

The firſt manner of preparing the Spirit of Brimſtone.

WEE have cauſed a Draught to be made of the figure of the Veſſels for both theſe Operations, becauſe the mind of the Artiſt is more ſenſibly toucht with the repreſentation of them, and he may thereby much better apprehend how to diſpoſe of things; for Objects move more powerfully the apprehenſive faculty, then words can do; wherefore we refer to the enſuing Scheme, they that ſhall be inclined to put in practice the following Operation.

Take a great gray earthen Pan, in the midſt whereof place an Iron Trefoot, capable of upholding an earthen Diſh glazed without and within; fill up this Diſh with Brimſtone beaten to courſe Pouder, and melt it in a ſlow heat; then ſet it on fire with a Brimſtone-Match, or an Iron made red hot in the fire; After which hang up a glaſs Bell, ſuch as thoſe that are uſed to cover Melons; let it be moiſtened with *Aqua Vitæ* above the earthen Diſh, ſo as the flame may come into the Bell, but not reach to the top, or touch it; take alſo care that there be not more diſtance between the circumference of the Pan, and that of the Bell, then the breadth of an inch, or one inch and a half, becauſe this ſpace is ſufficient to entertain the flame

The Furnaces and Veſſailes to make y^{e} Oyle of Sulphur,

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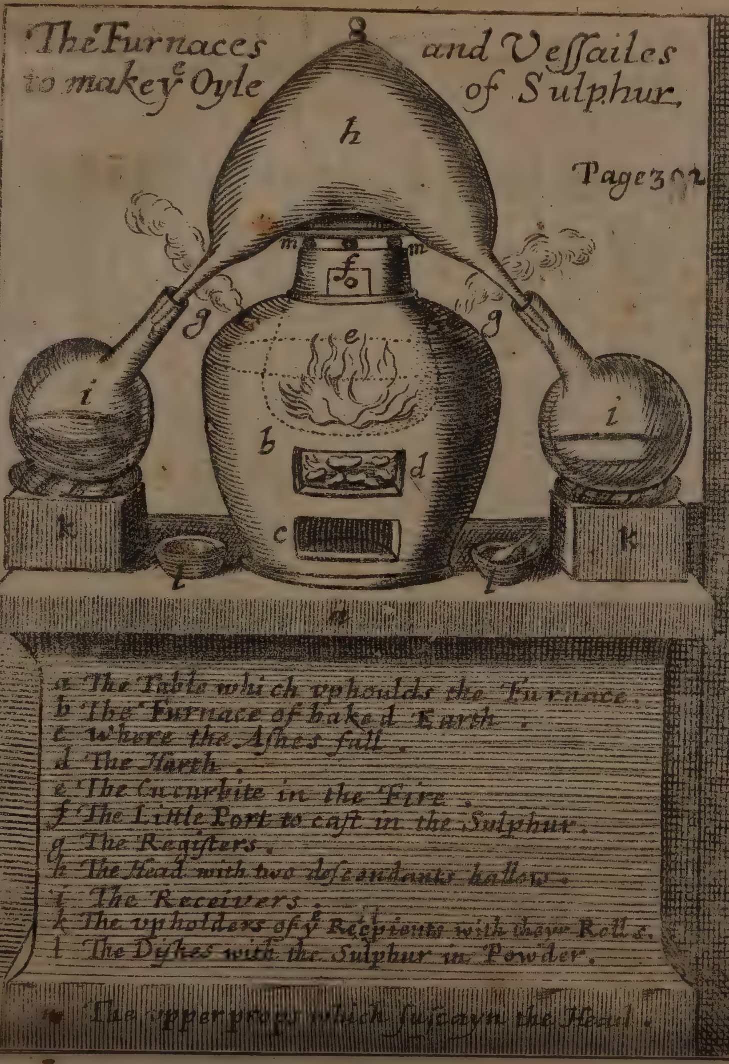
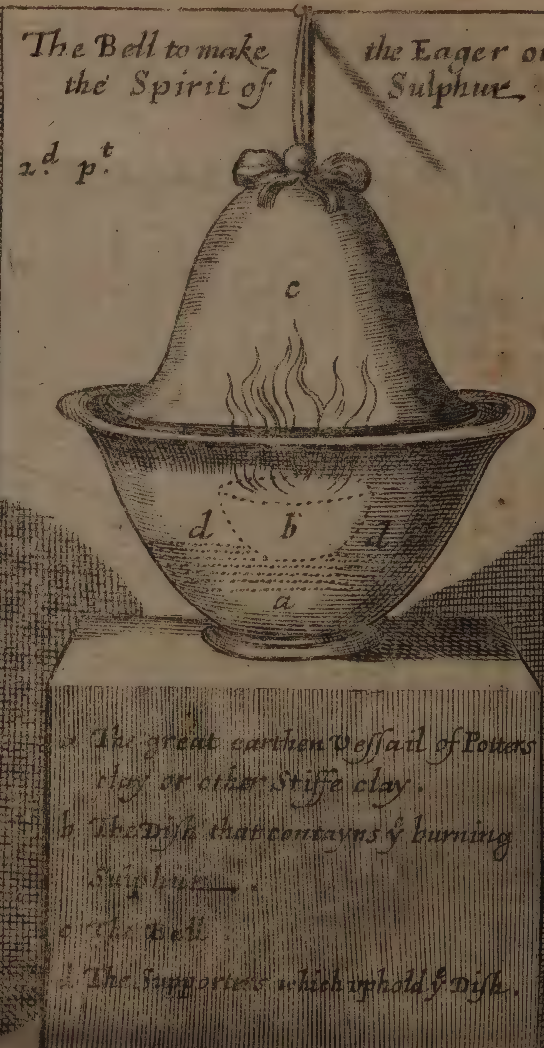


a The Table which vpoulds the Furnace.
b The Furnace of baked Earth.
c where the Aſhes fall.
d The Harth.
e The Cucurbite in the Fire.
f The Little Port to caſt in the Sulphur.
g The Regiſters.
h The Head with two deſcendants hallow.
i The Receivers.
k The vpholders of y^{e} Recipients with there Rolls.
l The Diſhes with the Sulphur in Powder.
n The upper props which ſuſtayn the Head.

The Bell to make the Spirit of the Eager or Sulphur

2^{d} p^{t}



a The great earthen Veſſail of Potters clay or other Stiffe clay.
b The Diſh that contayns y^{e} burning Sulphur.
c The Bell.
d The Supporters which uphold y^{e} Diſh.

flame of the Brimſtone, and hinder the extinction thereof, which if it ſhould happen, great care muſt be had to kindle it again, that no interruption may happen in the Work: and when all the Brimſtone ſhall be ſpent, have another Diſh in readineſs to ſubſtitute in the place of the other. So ſhall you have the true Spirit of Sulphur *per campanam* very heavy, acid, and of a brown red colour; if the time hath not been too moiſt, and the Brimſtone not too much impregnated with vitriolick Salt. And if the diſtilled Liquor proves to be only clear and yellow, let it be rectified, and the ſuperfluous Phlegm thereof drawn away. The Artiſt may place as many earthen Pans and Bells under a Chimney as it can hold, to advance the more his work, for he may as eaſily uſe four or five as one; above all times chuſe that of the two Æquinoxes, Vernal and Autumnal, to work this Spirit. That ſeaſon being moiſt for the moſt part and rainy, which is a thing neceſſary in this Operation, otherwiſe you ſhall draw very little Spirit from ℔ j of Brimſtone, becauſe if the Air be too dry, by intervention of either cold or heat, it is not capable of coagulating the acid and vitriolick Spirit of the Brimſtone, which contrariwiſe is totally diſſipated with the fat and inflammable ſubſtance of the Brimſtone. We will ſpeak of the Vertue and Faculties of this Spirit, after we have taught the ſecond manner of preparing it.

The ſecond manner of making the Spirit of Sulphur & Brimſtone.

HAve a ſmall Furnace of Baked Earth, capable of receiving a ſtrong earthen Cucurbit, which may endure well the fire, having a ſquare hole made in the body or belly of it, whereto a piece to cloſe it up muſt be exactly fitted; let the Cucurbit alſo have four ſmall eminencies diſtant the one from the other, to keep up the border of the Limbeck-head, which is to be applyed upon, that there may be room and air to let go and evacuate part of the ſmoak aſcending from the Brimſtone when it takes flame, otherwiſe you ſhould have nothing but acid Flowers, and a whitiſh Liquor; this done, heat ſoftly the Cucurbit at firſt, then encreaſe the fire till it become red, and having at hand very good Brimſtone, well choſen and dry, beaten to groſs Pouder, throw about ℥ ij thereof at once into the Cucurbit through the ſquare hole, and immediately ſhut it cloſe again; thus continuing until the aſcending vapours begins to condenſate themſelves, and thicken in the Still-head, and drop down into the Recipients, which muſt be applyed to both noſes of the Still. You muſt alſo make choice of a moiſt and rainy weather to work this Spirit, if you will have it in quantity; the time being ſeaſonable, the Brimſtone good, the

Artiſt watchful in keeping up his fire, and throwing in Brimſtone as ſoon as the flame doth ceaſe; you may hope ℥ j ß from each ℔ of Brimſtone. The proportion of the Furnace, and neceſſary Veſſels for this Work, may be better ſeen by the Artiſt in the Figure, then we could be able to deſcribe, wherefore we refer him thither. He may alſo find out the vertues and proprieties of this acid Spirit of Sulphur, by comparing thoſe we have attributed to the Spirit of Vitriol; to which we add nevertheleſs, That this Spirit is a Specifick Remedy againſt the Plague, and other Diſeaſes occaſioned by putrefaction and corruption, as likewiſe againſt Aſthma; above all things, it preſerves Health, if it be taken in the quantity of *gutt.* iij every morning, in White-Wine or in Broth, becauſe it redreſſes the defects of the Ventricle, and ſufficiently ſtrengthens it to hinder indigeſtions, which are the ſprings, cauſes, and originals of moſt Diſeaſes in our Bodies. This Spirit is alſo uſed with good ſucceſs, mixt with Plantain-Water, in the falling of the blind Gut, fomenting and bathing gently the part with a Spunge dipt in the Liquor.

How the true Oil of Brimſtone is to be diſtilled.

THoſe that are verſed in matters of natural Philoſophy, know that Minerals are only crude and undigeſted, becauſe their conſtitution is ſuch, or becauſe they are prematurely taken off from their Matrix as a green and uripe Fruit, pluck't off before his time from the Tree, and it is want of a due digeſtion only, that they are uncapable to produce all the noble effects which nature hath made them apt to bring forth: but the intention of that good and kind Mother, aiming ſtill at the beſt, hath by the mixture of ſome other matter, been fruſtrated and diſappointed, or by being interrupted in her work which ſhe could not bring to perfection by the privation of inward and outward heat which did foment and cheriſh it, to bring it to the higheſt degree of its natural predeſtination: wherefore all the Philoſophers that have known and followed Nature cloſely, have ever endeavoured to let Art begin again where Nature had ended and had been interrupted, to digeſt and bring to maturation unripe ſubſtances, and ſupply the defects thereof. They have made uſe of viſible fire, and of its heat, to ſtir up that inviſible one which is hidden in the Center of mixt bodies, and conſtitute the chief part of their Soul, Eſſence, Efficacy and Vertue: And if this onely way could not bring them to their deſired ſcope, they have ſought in other Mixts ſome analogous ſubſtance, which could ſympathize and anſwer with a proportional heat to that which they intend to perfect and multiply. This ſame way we do intend to hold in the maturation of common Brimſtone to correct it, and this way to ſtir up the faculties and wonderful vertues it hides under the ſhade of its Body, which is the rind and cover of the light and internal fire by which it is produced.

To this end, let the Artiſt take as much of well choſen common Brimſtone as he doth think fitting; then beat it to Pouder, and digeſt in Aſhes with a moderate heat in a Matraſs, without any melting at all, the ſpace of 40 dayes uninterrupted; this digeſtion will correct the ſtench and ill ſmell of the Brimſtone, and will encreaſe the vertues thereof in a quadruple proportion, which immediately he will perceive by diſſolving a ſmall portion of this digeſted Brimſtone in ſome Oil, and doing the like with other not digeſted and ripned; for the one will yeeld an unpleaſant ſmell as it uſes to do, and the other will rather recreate and pleaſe the ſmell then offend it. After this firſt Operation, a ſecond muſt be put in practice, which cannot be but by the means of a ſubtil, æthereal and volatile Oil which may open the body of this Brimſtone, and make it capable of being converted it ſelf into a ſubtil, penetrating and pleaſant Oil. This Oil muſt be none elſe but of Turpentine, drawn after the manner we have taught before. And as we have laid for an infallible and ſure Axiom, that the ſubſtance which muſt open and ſubtilitate, muſt in many degrees exceed that Body that is to be opened and ſubtilitated; ſo muſt the Artiſt put viij p. of this Oil upon j p. of digeſted Brimſtone made into very ſubtil Pouder, and let them digeſt together in *B.M.* until this Oil hath almoſt diſſolved all the ſubſtance of the Brimſtone, and be turned as red as an Oriental Ruby; which done, diſtil the Turpentine Oil, and draw it off again in the ſlow heat of Aſhes, until that which remains in the Retort becomes as thick as a Syrup; then cohobate that which is extracted, and digeſt it together the ſpace of eight dayes, and reiterate the diſtillation as before, and ſo continue ſeven times together digeſting, cohobating and diſtilling; but the ſeventh time draw off the Oil of Turpentine, as before, to the conſiſtency of a liquid Syrup; then encreaſe the fire in ſome ſmall degree, and change the Recipient, and thus proceed in the diſtillation thereof, and you ſhall have a true Oil of Brimſtone, red, well ſmelling, and penetrating, which is a very good Balſom both inwardly and outwardly, the efficacy and vertue whereof cannot ſufficiently be exalted. It is a moſt excellent Vulnerary, curing internal Ulcers, reſiſting mainly corruption, and allaying all irritations and fits of the Mother; It is a wonder of Remedy againſt the Plague, Cholick, Catarrh's and Fluxions, Aſthma's or ſhort breath, and Empyema's, or corrupted Ulcers in the Stomach; It abundantly provokes Sweating and Urine, and doth work alſo by inſenſible tranſpiration. The Doſis may be from j drop to vj, in ſome appropriated Syrup, or the yolk of a new laid Egg, in the morning faſting. For outward application, it is an unparallel'd Remedy, to diſſolve and digeſt tartarous and ſcrophulous Tumors; as alſo to allay griefs, particularly that of the Sciatica: Finally, it may be ſaid, that this true Sulphur is none of the leaſt Maſter-pieces of our Art, provided the Artiſt be punctual and ſedulous, and hath been careful to ripen and digeſt well the Sulphur, as we have preſcribed. He ought then to follow the exhortation of that great and renowned Philoſopher and Phyſitian *Van Helmont*, when he ſayes, ſpeaking to Artiſts that are deſirous to learn ſome profitable and good Operation, *Hortor itaque Tirones, addiſcant ſulphura mineralium ſpoliare vi peregrina ac virulentæ ſub cujus cuſtodia abditur, ignis, Arceum in ſcopos conſideratos placidiſſimè deducens.* But as this Operation is long and painful, and that every one ſhall not have the time or capicity to attain to the perfection of it, we will give yet another way of diſtilling a Balſamick Oil of Brimſtone, only good for outward uſes, yet withal endowed with many excellent Vertues.

How the fætid Oil of Sulphur or Brimſtone is to be prepared.

℞ ℔ j of Brimſtone made into fine Pouder, mix it with ℔ j ß of Oil of Linſeed in an earthen glazed Pan; put this Pan on a ſlow fire at firſt, and ſtir continually the matter, encreaſing the fire by degrees, until all be well boyled and united into a lump, which will have ſome likeneſs unto coagulated Ox Blood; let the matter cool, to mix it afterwards with ℔ ij of calcined Vitriol; and put it in a capacious and well luted Retort, to make the diſtillation thereof in a cloſe Reverberatory, according to the ſeveral degrees of fire; after diſtillation, ſeparate the Oil from the wateriſh Liquor; then rectifie the Oil in Sand with twice its weight of Salt of Tartar, and this will ſubtiliate it, and correct much the ſtench and ill odour thereof. It is an admirable ſecret in time of Plague to bring the Boyls or Sores to maturation, and cure the Ulcers after the Skars are fallen from the Sore: It advances alſo their maturation and falling, and hinders the venom from ſpreading too far.

The Infuſion and Extraction. How the Balſoms and Tinctures of Sulphur are to be made.

WEE joyn together the Operation of Infuſion and Extraction, becauſe the laſt doth neceſſarily follow the firſt. Both do ſupply us with Balſoms and Tinctures, which are Remedies highly to be eſteemed by reaſon of their efficacy and vertue. For as Brimſtone is of it ſelf uncorruptible,and preſerves dead bodies from putrefaction; with how much more reaſon ſhall he hinder the corruption and decay of living bodies,and reſtore the defects of the radical Balſom of our Life, when once altered? Wherefore above all things we recommend unto the Artiſt to delight himſelf in the Works of Balſoms, and Tinctures of Brimſtone, which will ſupply him with Medicaments leſs ſubject to fail in their Operations then others. For we muſt confeſs, that whatſoever the moſt excellent Remedies have of Vertue, Faculty, Efficacy and Power, onely proceeds from that Ray of Light and internal Sulphur they have in themſelves, whether extracted from Animals, Vegetables, or Minerals; and it is for this only reaſon alſo that we have ſo much recommended the conſervation of the volatile ſulphureous Salts or Subſtances, becauſe it is the laſt rind and covering of Spirit and Light, from whence proceed all the vertues and actions of natural Bodies.

We will deliver three ſeveral manners of Balſoms of Brimſtone,and as many wayes to extract the Tincture of it, that the Artiſt may the better be informed of the method of working, and better apprehend the nature of things, and their intrinſecal vertue.

The plain Balſom of Sulphur or Brimſtone.

PUT in a long neck Matraſs, Flowers of Brimſtone twice ſublimated with Vitriol ℥ iv, and pour upon it ℥ viij of æthereal Oil of Turpentine,diſtilled in the manner we have already taught; place this Matraſs in Sand, and give it at firſt a moderate fire, which encreaſe by degrees until the Flowers of Brimſtone be diſſolved, and the Oil of Turpentine be tinged with a very red colour; then let it cool, and filtrate the ſame through a Cotton, and put in a cloſe glaſs Viol to keep for uſe. Some make uſe of the diſtilled Oil of Aniſeed, Fennel, or Juniper-Berries to extract this Balſom, whereof we leave the choice to the freedom and liberty of the Artiſt,ſince the Oil cannot chuſe but be very good to encreaſe the vertues of this Balſom, which are excellent: for it is ſingular againſt Phthiſick, and to correct defects of corrupted breath, and to cure Ulcers in the Lungs; but above all, it is commendable againſt Peſtilence,and all other contagious Diſeaſes, whether adminiſtred as a Preſervative, or given to Patients, and already ſick Perſons, as a curative Remedy. The Doſis is from j drop to xx, in Lagwort or Butter-bur-Water, or diſtillation of *Enula Campana* Roots.

The compounded Balſome of Brimſtone.

This compounded Balſom is called *Antipeſtilential Balſom*, or *Balſom of Life*, by reaſon of the admirable vertues that are thereof. It is made with ℥ viij of diſtilled Oil of Juniper-berries, ℥ iv of Oil of Amber, ℥ ij of Oil of Rhew, ℥ j of Oil of Camphire; all which put in a long neckt Matraſs, and add ℥ iij of Milk or Magiſtery of Brimſtone, ℥ ij of Myrrh, ℥ j of Aloes Succotrina, and ℥ ß of well choſen Saffron; digeſt all theſe in Aſhes together, in a ſlow heat, the ſpace of ſeven natural dayes, or rather until all theſe ſubſtances be converted into a very red Balſom, which muſt be filtrated through a Cotton, and kept as a choice and precious treaſure againſt the Plague, and all peſtilent and dangerous Diſeaſes. The Doſis may be from j drop to xij, in appropriated Syrups, or ſome Spirits.

The Vulnerary Balſom of Brimſtone.

℞ ℥ iv of good and well choſen Brimſtone; beat it to fine Pouder, and mix it with as much Salt of Tartar very dry; this mixture put in a glazed earthen Diſh, and place it upon a ſlow and moderate fire, ſtirring it continually with a wooden Slice, until all be reduced to a Maſs, called *the Liver of Brimſtone*; having proceeded thus far, remove the fire, and let the matter cool: then beat it to Pouder, and put in a Matraſs, adding to it ℥ j of Aloes Succotr. ℥ ß of fine Myrrh, and ʒ ij of Saffron, all beaten to fine Pouder; pour upon it j p. of yellow Oil of Turpentine, and ij p. of its red Oil, which ſome call *the Balſom thereof*, and that until the Oils ſwim above the matters four fingers high; place the Matraſs in Aſhes, and there keep it in digeſtion, encreaſing the fire by degrees until the matter begin to ſimper; then look whether the Extract of the Subſtances be made, and they diſſolved; which being ſo, filtrate the Balſom through a Cotton to keep for uſe, and in caſe it be not ready, keep it on the fire till it be. We dare confidently warrant that this Remedy ſhall never fail thoſe that ſhall know how to uſe it skilfully, in the cure of Wounds, Ulcers and Contuſions; for it is one of the moſt excellent Balſoms which Art can contrive for outward Applications, whereof the Chymical Apothecary, which is curious of the reputation of his Art, and his own, muſt make uſe, whenſoever he intends to make the Plaiſter called *Diaſulph.* if he expects the Operation and Vertues which are attributed unto the ſame.

The firſt Tincture of Sulphur or Brimſtone.

THE Artiſt having made the plain Balſom of Brimſtone, and this Balſom being well impregnated with the internal redneſs of the Sulphur, he muſt put it in a glaſs Cucurbit, and pour upon it twice as much diſtilled Rain-Water; then place the Veſſel in *B. M.* and draw off the Spirit thereof by diſtillation, and the æthereal Spirit or Oil of the æthereal Turpentine, will leave the Sulphur which it had extracted and aſcend with the Water, and the true Balſom of Sulphur ſhall remain in the bottom of the Cucurbit; which may be given from j drop to viij, in all Diſeaſes wherein the plain Balſom doth conduce, for this is more efficacious. And to make the better the true Tincture thereof, pour upon that which remains in the Cucurbit very well alkoholized Spirit of Wine four fingers high; then cover it with its Blind-head, and having luted them together with Bladder and whites of Eggs, put it to digeſt and extract in the vaporous Balneo, until the Spirit of Wine be tinged with a very high colour; then draw it off, and put new in the place, and thus proceed until the Spirit will take no more colour; then filtrate all the Tinctures, and diſtil in *B. M.* till the two third parts be diſtilled away. They that will add ℥ ij of good Saffron, in a knot at the laſt diſtillation, will encreaſe very much the vertue of this Tincture, and ſo ſhall the Artiſt be free to make yet ſome other additions according to his Skill and Judgment, and as he ſhall intend it for ſome peculiar uſe; But it is very neceſſary to have it plain, becauſe ſome other thing can ſtill be added there according to the exigency and ſeveral natures and conditions of Diſeaſes. This Tincture is more ſoveraign yet then the Balſoms, becauſe it is more open, and more exalted by the help of the Spirit of Wine, which is the Menſtruum more analogous and conformable to our natural Spirits: which cauſes it to drive and make thoſe Remedies which it hath volatiliz'd, to penetrate into the ultimate digeſtions. Wherefore it may be uſed for internal Diſeaſes, with a quite different ſucceſs then that which Balſoms can produce; it may be adminiſtred from ij drops to x, in Wine impregnated with the vertue of Juniper-berries, new laid Eggs, or ſome Pectoral or Alexiterial Syrup.

The ſecond Tincture of Sulphur.

BEat to Pouder ℔ j of very pure and very dry Salt-peter, and ℥ iv of well choſen Brimſtone, and mix them together: after which place a good Crucible, or earthen Pot, not glazed, ſuch as in vulgar French is called *un Carnion*, on an earthen round Tile in a Wind-Furnace, and put round about in quick Charcoal to kindle by degrees; and ſo gently at firſt heat the Veſſel until it be red on all ſides; then pour into it your matter before mixed, by one ſpoonful at once, and renew it ſtill in the ſame quantity, after the noiſe of every throwing in is paſt; this done, encreaſe the fire, and open all the Regiſters of the Wind-Furnace, and drive the fire till all the matter be reduced and brought to a red maſs or lump; which having taken off from the fire, and beaten to Pouder in a warm Mortar, put in a Matraſs, and pour upon gently tartarized Spirit of Wine to the height of two fingers; then having ſtopt the Matraſs with its Blind-head, and well luted, put it to digeſt and extract in Embers, until it be tinged with a very high red; then remove the fire, and filtrate the Tincture, and draw off half of the Menſtruum by diſtillation in *B.M.* with a very gentle heat, and in the bottom of the Cucurbit will remain a true Tincture of Sulphur; which is an excellent Specifick againſt the Plague, Agues, Scurvy, obſtructions of the Liver, and all Diſeaſes of the Lungs. The Doſis muſt be from iij to xij drops, in the afore-mentioned Liquors.

The third Tincture of Sulphur.

AS there are many delicate and tender perſons, who cannot endure the ſmell of Balſoms and Tinctures of Brimſtone, and yet theſe Remedies are abſolutely neceſſary for the cure of many great and dangerous Diſeaſes; therefore have Chymical Artiſts endeavoured to reduce into a body again the Tincture of Sulphur, and deprive it of its ill-ſavoured ſmell, which doth annoy the Brain and Stomachs of delicate Perſons, which is performed in the following manner.

℞ As much as you will of the firſt Tincture of Sulphur, prepared as we have preſcribed above; draw off one half of the Liquor, and put the remainder in a cold place or Cellar, that the coldneſs of the Air may reduce to a body again, and coagulate this Tincture into Chryſtal, which contain in themſelves the quinteſſence and centrical vertues of the Brimſtone: ſeparate from theſe Chryſtals the Liquor which is in them, and diſſolve them in new Spirit of Wine; then draw it off by diſtillation to a third part; which put again in the Cellar, and let it ſhute into Chryſtals, and ſo begin anew reiterating this Proceſs ſeven times, or until theſe Chryſtals have loſt altogether all the ill ſmell they had got in their firſt Preparation. So ſhall you have a true Magiſtery, or a true dry Tincture of Brimſtone, which will be as uſeful in every reſpect, as the forementioned Remedies, provided it be uſed a little longer. The Doſis may be from ij to x or xij grains, in ſome convenient Liquor, in Lozenges, Conſerve, or ſome appropriated Electuary, ſuitable to the delicacy of the Patient, and quality of the Diſeaſe.

The Salification. To prepare the Salt of Brimſtone.

THere remains for the moſt part in the bottom of the diſhes which have been uſed, to keep in the burning Brimſtone in the diſtillation of the Spirit thereof, a kind of Feces or blackiſh *Caput Mortuum*, light, ſpongious, and as it were in leaves or beds, which muſt be calcined and reverberated in a Crucible, until it turns to a whitiſh gray; make a Lye afterward with diſtilled Rain-water, or Dew of Vitriol; which filtrate and ſlowly evaporate in Aſhes to a thin skin or dry bottom; for as there is little of matter, ſo there is little of Salt: wherefore that of Vitriol may alwayes lawfully be ſubſtituted in the place of that of Brimſtone, without any ſcruple or queſtion to be made of it, becauſe they ſpring from the ſame original, and have the ſame vertue, which is to cleanſe and ſtrengthen the Stomack, and root from it all ſeminaries of Worms and Corruption, and expel them from thence. This is all we thought neceſſary to ſay concerning Brimſtone, to inſtruct fully the Artiſts, whereby they may take opportunity to enlarge further their Experiments if they pleaſe.

Of Bitumen, *or fat Earth.*

WE have comprehended generally in this Section, *Sulphurs* ſo properly called, and Bituminous ſubſtances; and as we have hitherto ſpoken of the firſt, we muſt end by *Bitumens* or earthly Pitch, which are the laſt. Bitumens are generally underſtood and accepted for all kind of very fat and clammy Minerals: wherefore Naturaliſts do conſtitute ſeveral ſpecies of it, as the *Karabe* or yellow Amber, Ambergreeſe, *Spermaceti*, Bitumen, properly called *Aſphaltum Petroli*, *Seacoal*, and *Jet*. We will treat here of the other *Bitumens* which are more conſiderable, and whereon the Operations of Chymiſtry are intended to draw Remedies from them, and ſeparate the purity from the impurity thereof: amongſt all others, *Karabe* and Ambergreeſe obtain the chief and principal place: Wherefore we will only ſpeak of theſe two kinds of Bitumens principally, becauſe the others admit of ſo little of preparation, as it would be unneceſſary to ſpeak thereof, ſince the Artiſt may ſufficiently be informed by what we have already ſaid, and ſhall ſay anon of the *Karabe*.

Of

Of yellow Amber or Karabe.

THE Opinions of Authors who have writ about yellow Amber, are very various, but principally thoſe of the former Age, becauſe they wanted the light of Chymiſtry, to give them a deeper impreſſion of Knowledge in the things of Nature: but in this latter Age, where we are enlightned by that noble Torch, and where it hath been ſo ſucceſsfully uſed to advance Anatomy of mixt Bodies, without any other prevention of mind then to diſcover truth for our own advantage, and leave it to improve to others; Chymical examination hath taught us, that yellow Amber or ***Karabe***, is nothing elſe but a bituminous Juyce or Pitch and Rozin of the Earth well digeſted, flowing from the ſubterraneous Veins of it into the Sea, where it gathers, coagulates its ſelf, and hardens finally more and more. There are three principal kinds thereof; The firſt, which is more eſteemed and ſought for, is white and opacous, the moſt digeſted and ripened of all, which is known by its purity, pleaſant ſmell, and great quantity of volatile Salt, which is the moſt infallible token of its goodneſs and vertue. The ſecond is yellow, which is lucid and tranſparent, abounding more in Oil then in Salt, and by conſequence more digeſted and leſs valuable. The third is that, which between both is mixt of white and yellow, but with ſome touch of earthlineſs and impurity, which makes it inferior in worth to the two former. All three are endowed with no common vertues; but if any will make uſe of yellow Amber, for Phyſical purpoſes, without any other preparation then triturating it upon a Porphyry-ſtone, the whiteſt muſt ever be taken and preferred, having a Balſamick ſmell almoſt like Flower of Roſemary, when it is a little ſtirred by friction. It is the white alſo that muſt be choſen to make the Tincture or Eſſence thereof, as we ſhall teach hereafter. But the ſecond and third ſort may be uſed for diſtillation, becauſe the pure part thereof is ſevered from the impure, and that rectification may correct the defects of the firſt diſtillation, by which the vitiouſneſs of the natural digeſtion of *Karabe* is already corrected, and the action of fire hath ſeparated the heterogeneous and groſs ſubſtance lurking in it. *Karabe*, in the *Perſian* Tongue, ſignifies attractive of Straw, which is one of the proper qualities of Amber.

The general vertues of Amber are, to warm, deſiccate, ſtrengthen and bind moderately; it is principally dedicated to the Head, Spleen and Matrix. Wherefore it is very ſucceſsfully made uſe of in Catarrhs and Fluxions, Epilepſie, Apoplexy, Lethargy and Vertigo; as alſo to allay all irritations and riſings of the Spleen. It is a wonderful Specifick againſt all fits of the Mother, and chiefly againſt the riſing of it, and ſuffocations which it cauſes. It is alſo a true coagulated Balſom, uſed againſt Bloody-flux, and Gonorrhæa, and above all, againſt the Whites: briefly, it may lawfully be ſaid of Amber, That it is the Life and Soul of Remedies dedicated to the cleanſing of the Mother, and redreſſes all the defects thereof. Some believe, That they that wear Amber Collars, are not ſubject to Eye-ſores, or Diſeaſes in the Throat, whereof, they ſay, it hinders the ſwelling. The Doſis of prepared Amber, is from ℈ ß, to ʒ j, in new laid Eggs, ſome Syrup, Lozenges, or Conſerve.

The Chymical Preparations of Amber, are, *Diſſolution* or *Extraction*, to make the Tincture, Eſſence or Magiſtery thereof: and Diſtillation, by the help of which its Mercurial Spirit is extracted, as alſo the Subtil Oil, Balſamick Oil, Volatile Salt, and Colophony or Roſin.

How the Tincture or Eſſence of Amber is to be prepared.

PUT ℥ iij or iv of white Amber, prepared on a Porphyry-ſtone, in a Blind-head, and pour upon it very much Alkoholized Spirit of Wine four fingers high; and having ſhut up cloſe the Veſſel, and well luted it, put it in Aſhes to digeſt, diſſolve and extract in a moderate heat, until the Liquor be tinged with a fair golden yellow; then open the Veſſel, draw off the Liquor by inclination, and reiterate again a new Diſſolution and Extraction, until the Spirit of Wine takes no more of the Tincture. Filtrate all the Tinctures afterwards, and draw off the three parts of the Menſtruum by diſtillation, in the ſlow heat of *B. M.* and the Eſſence of Amber will remain impregnated with the taſte and ſmell of its own Mixt, which is capable to produce very noble effects, by reaſon of the ſubtility of the parts thereof. Some do pretend to make the Magiſtery thereof, precipitating this Tincture in common Water, but they are in a great error; for it is properly to unmake or undo what hath been made with great labour, ſince the Water drawing to it ſelf the Spirit of Wine, the body of the Amber forſakes it, and precipitates into a Gum or Roſin, which is not much better then white prepared Amber, except only that it is ſomewhat purer. The Artiſt then ſhall preſerve this Eſſence in Liquor, and ſhall uſe it in all Diſeaſes for which we have aſſigned the general vertues of *Karabe*. But this Remedy muſt be exhibited in ſome Syrup, as that of Cinnamon, Coral, Flowers of Pæony, or yolks of Eggs; it may alſo be given in æthereal or burning Spirits, as of Juniper, Elder-berries, Black-Cherries, or Spirit of Flowers of Lilly Convallium, drawn with Sack; becauſe if it was given in any wateriſh Liquor, the Amber would return to a body, and ſo would not produce ſo good nor ſo quick effects, as when it remains in Liquor, and all its parts diſunited and volatiliz'd, that the *Archeus* of the Ventricle may bring all the powers thereof to action in the higheſt perfection. The Doſis may be from x to xx drops, even to xxx.

How the Magiſtery of Amber or Karabe *is to be prepared.*

AS we, with very good reaſon, did condemn the falſe and pretended Magiſtery of Amber, ſo muſt we recommend that which is truly made, and is capable of producing ſome good effects in relation to health: you may proceed therein as follows.

℞ White Amber reduced to an impalpable Pouder, as much as you will; put it in a Matraſs or Cucurbit, pour upon it very good and very ſubtil diſtilled Vinegar 4 fingers high; then place the Veſſel in Sand, and let the matter boyl three or four dayes, pouring ſtill new diſtilled Vinegar very warm, as the firſt vapours away, and this continue until the Liquor is become red; then filtrate it, and draw off the Menſtruum in Aſhes to a dry bottom, and the Magiſtery ſhall remain in the bottom of the Cucurbit; which diſſolve in equal parts of Roſe-Water, Balm-Water, and Cinnamon-Water, and digeſt them together the ſpace of 24 hours; then draw off the Water again in Aſhes ſlowly, which alſo muſt be obſerved the firſt time when you draw off the Vinegar; for over-haſte, and too much of fire, ſpoils all the work, and marrs the vertue of the ſubſtances. This digeſtion and diſtillation, muſt be reiterated three times, but at the third time you muſt remove the fire, after you have drawn off three parts of four, adding to the remainder ℥ j of well filtrated Juyce of Lemon, or ʒ j of very acid and well rectified Spirit of Vitriol; this done, go on gently in your diſtillation until the matter be well dryed, which reduce to Pouder and keep for uſe; for it is a very good Medicine to provoke Sweat, and ſtrengthen the Heart and its Functions; it may be given with hope of very good ſucceſs in Meaſels, Small-Pox and Pleureſie: but above all, it is a Specifick againſt the Scurvy, and its dependances. The Doſis may be from vj *gr.* to xv and xx, in Conſerve of Gelly-flowers, Confection of Hyacinth, or *Diaſcordium Fracaſtoris*, giving to the Patient to drink upon it *Carduus Benedictus*, or Meadow-ſweet *(Ulmaria)* Water.

How

How the Diſtillation of Amber is to be made.

OUR advice to the Son of Art is, to take for this Operation, of the third kind of *Karabe* or Amber, whereof we made mention before, becauſe it contains much Oil, and abounds alſo in volatile Salt. Let him then take ℔ iij or iv, and having put them in a great Retort, ſo capacious as the matter may fill up the third part, let him place it in a cloſe Reverberatory upon the cover of a Pot, with two fingers thick of Aſhes under the bottom of the Retort, which will be to it inſtead of a Lute; having alſo fitted to the neck of the Retort a large Recipient, exactly luted, let him give a gentle and graduate fire until the drops of the acid Spirit be over, and the Oil begins to appear; then he muſt encreaſe a little the fire, and regulate it ſo that the drops may follow one another. But he muſt begin to encreaſe, and drive it hard when he perceives the Oil to grow thicker, and the volatile Salt to ſublimate it ſelf, which may be known by the vapours and clouds coming forth out of the Retort; and let the fire be kept in this ſtate until the Recipient grows clear of it ſelf, which is an infallible token of the end of the Operation. That which is found in the Recipient after diſtillation, contains three diſtinct ſubſtances proceeding from one and the ſame root. The firſt is the Spirit, or mercurial acid and watery Liquor of the Amber, which comes forth in the firſt place. Secondly, The Oil which is mixed with much volatile Salt, which hath made it ſomewhat thick, unpleaſant to the ſmell, and high in colour. The third is the volatile ſulphureous Salt, which is not the leaſt conſiderable of the three in vertue and efficacy. The Artiſt muſt know how to ſeparate skilfully theſe ſubſtances the one from the other, to uſe them each ſeverally according to the ſeveral proprieties which are in them; and this is performed in the manner following.

How the Spirit of Amber is to be ſeparated.

PUT in a Matraſs with a long neck, all what you ſhall find in the Recipient after the diſtillation of Amber, and ſtop it with another Matraſs; then put it to digeſt in the vaporous Balneo in Saw-duſt, in a degree of heat analogous to the natural heat of man, the ſpace of three or four dayes, that the mercurial and acid Liquor may ſever it ſelf from the oleaginous part; that done, pour the Oil ſwimming above by inclination;

and when there ſhall remain but little in the Veſſel, wet a Filter of Paper with Balm or Roſe-Water, and pour into it by degrees and very gently, the Liquor remaining in the bottom of the Matraſs, and the oleaginous ſubſtance will remain upon the Filter, becauſe it is wet with Water, and the Spirit ſhall paſs clear through, which muſt be rectified gently in Aſhes to a dry bottom, that if any volatile Salt remains diſſolved in the Spirit, which almoſt is of the ſame nature, it may remain in the bottom without ſublimating and burning; keep this Spirit in a well ſtopt Viol for the time of uſe. It is a ſoveraign Diuretick, Diſopilative and Cephalick Remedy, which may be uſed upon all occaſions where the Amber may be uſeful; but particularly againſt *Obſtructions, and ſchirrous of the Spleen, or ſplenetical Tumors,* when acuated with its volatile Salt. The Doſis may be from iv drops to xij, in Tincture of Saſſafras, White-Wine, or Broth.

How the volatile Salt of Amber is to be ſeparated and rectified.

AFter the ſeparation of the acid and mercurial Spirit of Oil of Amber is made, put about ℔ ß thereof by it ſelf; which may be uſed when neceſſity ſhall require, for outward and inward Remedies, though it be not very pleaſant: but as it is animated with its volatile Salt, ſo may it much better and more ſucceſsfully be uſed againſt ſuffocations & fits of the Mother, and Epileptical Paroxyſms; as alſo to apply upon ſhrunk Members, ſtarved and paralytical Limbs, where, without compariſon, it is much more excellent and active, then that which is deprived of this friendly Salt. Take then all the remaining Oil, and put it in a great Matraſs or Blind-head, and pour upon it diſtilled Rain-Water, until it be in the ſame or a little greater quantity then the Oil; cover and lute the Veſſel, and put it to digeſt in Aſhes in a moderate heat, ſtirring it every hour, to ſeparate the better the volatile Salt from its Oil; for though it be intimately mixed with it, becauſe the Oil is of a volatile and ſulphureous nature, yet in proceſs of time will it come off from it, and be diſſolved and united to the Water by reaſon of its ſaline nature, which eaſily joyns and unites its ſelf to Water. When you ſee the Water well impregnated, remove the fire, ſeparate the Oil, and filtrate the Water which is full of the volatile Salt of the Amber, as it will be perceived eaſily by the acid and biting taſte thereof; draw off again three parts of the Water by ſlow diſtillation in Aſhes, and put the Veſſel in a cold place, leaving it there the ſpace of two dayes, and you ſhall find the volatile Salt chryſtallized and coagulated into a red brown ſubſtance, which ſeparate from the Water, and dry between two Papers in a ſlow and moderate heat: continue the evaporation of the ſuperfluous Water, and draw back all the Salt; and having dryed it, joyn it to the firſt, which is ever the pureſt and the beſt. You may keep part of it as it is, if you think fit; if not, put it all in a ſmall Cucurbit, covered with a blind-Still-head, and ſublimate it in Sand with a well graduated heat, and ſo ſhall this Salt riſe fair, pure, white and clean, leaving all its impurities in the bottom of the Veſſel. This volatile Salt is the beſt and moſt excellent part of Amber, worthy that Artiſts ſhould ſeek it with all imaginable curioſity, conſidering its high vertues, which are yet more general and leſs confined then thoſe of Amber, or its Spirit or Oil, ſince it is the ſoul and intrinſecal eſſence thereof. It is an admirable Remedy in the firſt beginnings of Dropſies, and particularly in Leucophlegmacy, where it is wonderful, becauſe it potently diſcharges the Spleen, and all other parts of the lower Belly, by Urines and Tranſpiration; above all this, it hath all the Vertues we have attributed to Amber in a quadruple proportion. I muſt then once more recommend the uſe of it to the Sons of Art, with promiſe and engagement they will not find themſelves deluded by it. The Doſis is from iij *gr.* to xx, in Wine, Broths, or other appropriated Liquors, both ſuitable to the Diſeaſe and the Patient.

How to make rightly the Rectification of Oil of Amber.

After the ſeparation and rectification of theſe two firſt ſubſtances, we muſt alſo come to the third, which is the Oil. For as it is of a brown red colour, ſtinking, thick and groſs, we muſt teach the Artiſt three ſeveral wayes how to purifie it, and render it fluid, ſubtil and penetrating, that it may the better bring forth the wonderful proprieties and vertues which lie hidden in it.

For the firſt way, Mix the Oil remaining after the ſeparation of the volatile Salt, with ij parts of Aſhes taken from the Hearth, and j p. of decrepid Salt, putting as much as needs to reduce all into a lump or paſte, which may be framed into Pellets, or of a fit bigneſs to go through the neck of a glaſs Retort, which muſt be filled only half with them & placed in a cloſe Reverberatory with a well luted Recipient; give it firſt a gentle fire until the Oil begins to come forth bright and clear; and keep it in this ſtate, or encreaſe it by little and little gradually, until you obſerve the falling drops to begin to grow yellow, or inclining to redneſs; then change your Recipient, and ſubſtitute another well luted to it; then encreaſe the fire ſomewhat more, to force the Oil to ſeparate it ſelf from the leaſt atomes of bodies with which it is mixt; and thus proceed encreaſing ſtill more and more, until you find no more ſubſtance to come forth.

The ſecond way of rejecting this Oil, is, in putting it with Roſe, Marjoram, and Balm-Water, *ana* three or four pints, in a ſtill-body, and ſtilling it with the Moors-head, the Fat and the Worm, making the ſame Obſervations which we have enjoyned the Artiſt heretofore for the diſtillation of Vegetable Oils, and you ſhall have an Oil of Amber fluid and clear, fit for all thoſe uſes and purpoſes which Authors do commend it for in their Writings.

The third and laſt manner of Rectification is this: Pour it into a Retort, and put upon it, drop by drop, its equal weight of Spirit of Salt, placing the Retort in Sand, and diſtil it with a well regulated and graduate fire, and your Oil will come forth as pure and as clear as may be wiſhed. We will not unneceſſarily repeat the vertues of this Oil, becauſe they may be found comprehended in thoſe which we in general have attributed to *Karabe*. They that deſire to know more, muſt conſult Writers that have treated thereof, and do eſteem it and cry it up for an Heavenly Remedy.

Of Ambergreeſe, and its Chymical Preparation.

AMbergreeſe is one of the ſubſtances whoſe original hath much puzled the wits of Philoſophers: but they that have travelled in the *Eaſt-Indies*, and have ſearched more exactly into the nature of it, do unanimouſly ſay, That Ambergreeſe is nothing elſe but a *Butimen riſing from the bottom of the Sea*, which by the vertue of its own Salt is coagulated, and then digeſted and ripened by the Sun-beams; it is commonly found about the Coaſts of *Sofola, Mozambique, Melinda*; as alſo towards the *Maldive Iſlands*, and the *Cap Comorrin:* The beſt Ambergreeſe, is that which is of a yellowiſh gray colour, melts eaſily, and yeelds when you thruſt into it a hot Needle; but the beſt tryal, is the diſſolution thereof in very ſubtil and fine Spirit of Wine, for that which is pureſt, and leaves leſs terreſtreity and feces, is ever accounted the beſt. It is uſed in Perfumes, and inwardly; it warms, deſiccates, reſolves, ſtrengthens the Stomach and Brain, recreates and encreaſes the vital and animal Spirits by its volatile ſweet Sulphur, which is friendly to our nature. We have ſhewed a way to make a very good Perfume out of it, in the preparation of Benjuin. But there being a way alſo of opening and diſſolving it, to reduce more eaſily the power of it into act, we will deliver here two wayes of preparing the Eſſence or Tincture thereof, to put a period to our Work, by the preparation of this noble product of the Sea.

The firſt Eſſence of Ambergreeſe.

℞ Ambergreeſe of the pureſt ʒ ij, and xij *gr.* of very good Musk, White-Sugar-Candy ℈ j; grind altogether very exactly; and all being well mixed and incorporated, add to it by degrees, in the grinding of it, ℥ ß of burning Spirit of Roſes; this mixture put in a Matraſs, pour on it ℥ ij of Alkohol of Wine; ſtop the Matraſs with a Blind-head, and put it to digeſt four dayes in a vaporous Balneo; after which filtrate this Tincture thorow a Cotton, and keep it for uſe as one of the greateſt Reſtorers that can be found for Aged Perſons and cold Conſtitutions; It encreaſes the radical moiſture, and enables both Male and Female for Generation. It is given from j drop to vj, in Spaniſh Wine, Malmeſy, Hypocras, or ſome other analogous Drink, pleaſing to the palate and ſmell of diſeaſed perſons, or they that take it.

The ſecond Eſſence of Ambergreeſe.

AS there are many that will be glad to have open and diſſolved Amber without any mixture, and being a thing neceſſary both in the ſtate of Health, and in caſe of ſickneſs, ſo will we give here a way to make this Diſſolution plain and without affectation.

℞ then ʒ ij of very good Ambergreeſe, and grind them with *ana* of White Sugar-Candy, until the two ſubſtances be well incorporated and reduced to an impalpable Pouder, and ſo exactly united as they ſeem to be but one body; being thus, put this mixture in a Matraſs, and pour upon it four parts of its weight of Spirit of Wine three times drawn over Salt of Tartar; then ſtop the Matraſs, and put it to digeſt in a vaporous Balneo the ſpace of ſeven dayes, in a ſlow and conſtant heat, ſtirring often the matter; and when the Artiſt ſhall ſee the diſſolution and union of Salt, Sulphur, and Spirit of Tartar made, ſo that the Liquor be clear, yellow and pure, except ſome ſmall feces proceeding from the Ambergreeſe, which will ſettle in the bottom of the Matraſs; then let him filtrate the whole ſubſtance warm through a Cotton in a Viol, and ſtop it well, and then this eſſence being cooled, will coagulate it ſelf, and be congealed into a ſubſtance like unto whitiſh Butter, which melts with the leaſt touch of heat, even of the Palm of the Hand, into a yellow Liquor very ſubtil, and very excellent to perfume Broths, Jellies, Sweet-Meats, Conſerves, and all kind of Drinks; it may be uſed againſt ſwoonings, weakneſſes, to ſtrengthen the Stomach, as alſo to correct the ill ſmell of the mouth or ſtinking breath. The Doſis may be from j drop to viij, in the afore-mentioned Liquor.

Thus much we had to ſay to put an end to the Chymical Preparation of Animals, Vegetables and Minerals, thinking to have omitted nothing of what can ſerve for an exact Inſtruction of ſuch as intend to apply themſelves to the Study and Art of Chymiſtry: Wherefore we do exhort all Artiſts to follow punctually the path which we have traced, and ſhewed them, that they may more and more improve their skill in the ſearch of Phyſical Truths: And above all we exhort all Apothecaries, which are not yet initiated to the Myſteries of Chymiſtry, to beſtow ſeriouſly their labour and induſtry in that noble Art, without ſuffering themſelves to be carried away by the unruly torrent of vulgar Opinion, ſwelling only with ignorance, preſumption, malice and envy, that all of them may acrording to my lawful wiſhes, render themſelves capable of ſerving the Publick, as I in my particular have endeavoured to be in ſome manner uſeful to them: The only earneſt deſire I have for the good and eaſe of poor Patients, and for inſtructing thoſe of my Profeſſion; having induced and provoked me, to communicate what Experiences, improved by thirty years labour and ſtudy, have taught me, that all may redound to the Glory of God, the Good of my Neighbour, and the Exaltation of Phyſick and true Pharmacy,

FINIS,

ET LAUS DEO.

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